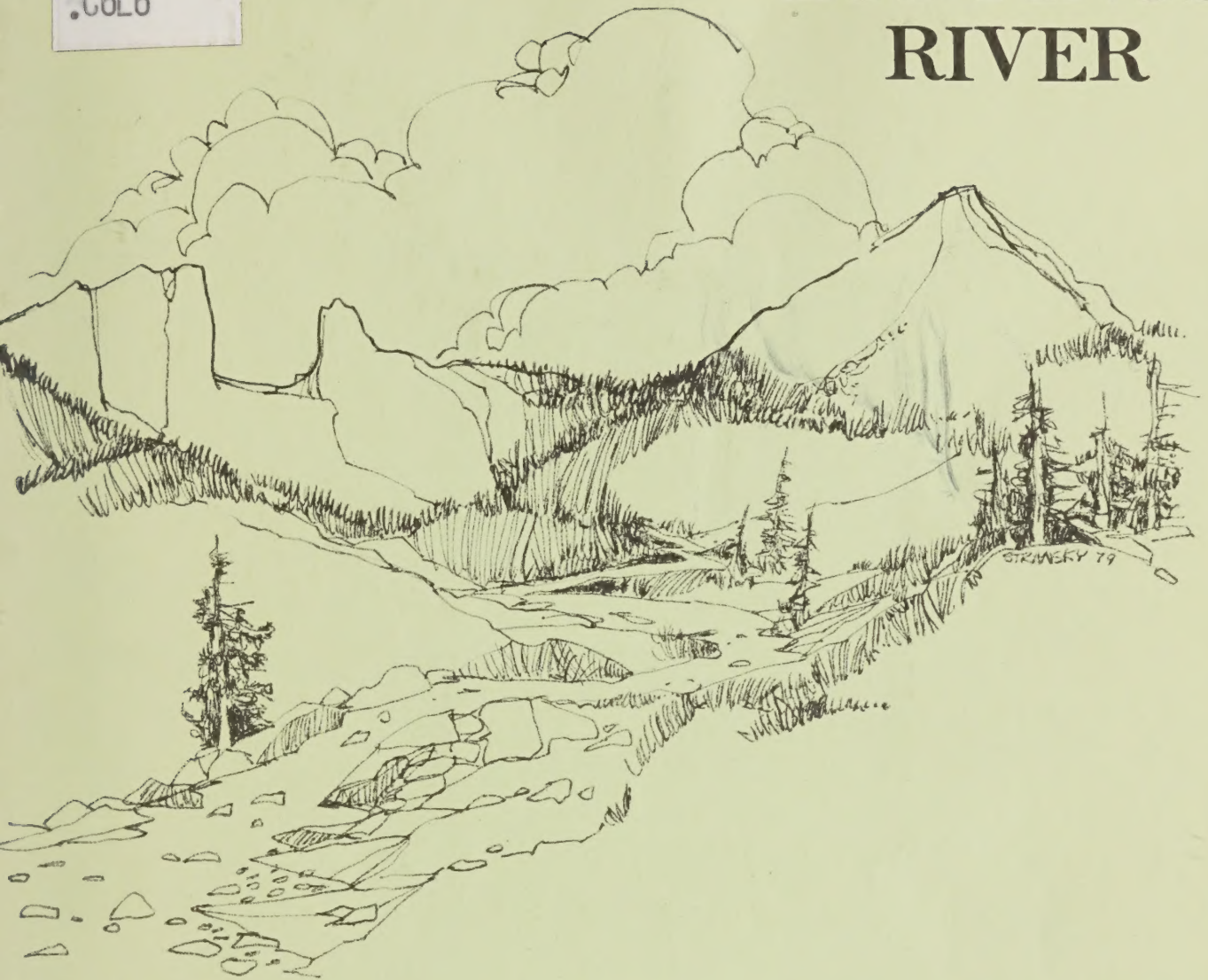


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LOS PINOS RIVER



DRAFT ENVIRONMENTAL STATEMENT & WILD & SCENIC RIVER STUDY

U.S. DEPARTMENT OF AGRICULTURE
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ROCKY MOUNTAIN REGION

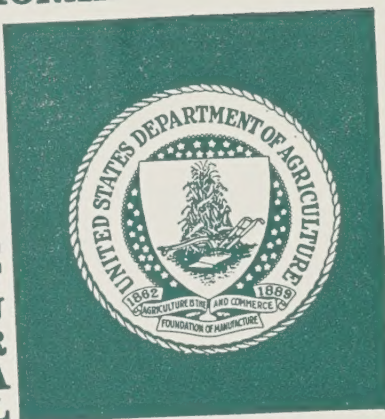


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DRAFT ENVIRONMENTAL STATEMENT

Designation of Portions of the Los Pinos River
and Six of Its Tributaries Under The
Wild and Scenic Rivers Act,
P.L. 90-542 as amended by P.L. 93-621
Hinsdale County, Colorado

Lead Agency: U.S.D.A. - Forest Service

Cooperating Agency: Colorado Department of Natural Resources
Colorado Water Conservation Board

Responsible Official: John R. McGuire
Chief, Forest Service
South Building
12th and Independence Avenue, S.W.
Washington, D.C. 20250

For Further Information Contact: Walter D. Werner
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701 Camino Del Rio
Durango, Colorado 81301
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Abstract:

This Draft Environmental Statement describes three alternatives regarding the addition of the Los Pinos River and its tributaries of Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide and Sierra Vandera to the National Wild and Scenic Rivers System. This portion of the Los Pinos and its tributaries are located in southwestern Colorado within the boundaries of the Weminuche Wilderness. The statement discusses the river's eligibility for being included in the National System and the estimated effects of implementing each of the alternatives. Alternative B, a recommendation to include the Los Pinos River and its tributaries in the National Rivers System, has been identified by the Forest Service and the State as the preferred alternative. The rationale for selecting this recommended action is shown.

Comments regarding this Draft Environmental Statement should be sent to the Forest Supervisor, San Juan National Forest, 701 Camino Del Rio, Durango, Colorado 81301, by

DRAFT ENVIRONMENTAL STATEMENT
SUMMARY

*Designation of Portions of the Los Pinos
River and Six of Its Tributaries Under
The Wild and Scenic Rivers Act, P.L. 90-542
as Amended by P.L. 93-621*

Legislative Action

Responsible Agency: U.S.D.A. Forest Service

Responsible Official: John R. McGuire
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12th and Independence Avenue S.W.
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Date of Transmission To EPA and the Public:

Summary

I. The recommended action is to amend the Wild and Scenic Rivers Act (P.L. 90-542, as amended) to include segments of the Los Pinos River and its tributaries of Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide, and Sierra Vandera in the National Wild and Scenic Rivers System. This segment of the Los Pinos and its tributaries are located in the Weminuche Wilderness, in Hinsdale County, Colorado. The approximate 54 miles of stream, including the mainstem and tributaries, are proposed for inclusion in the National System as a wild river.

Because present management of the river is guided by the Wilderness Act and subsequent regulation and direction, there are few issues and concerns. A major issue that surfaced is the future need for the Pine River Irrigation District to develop water storage at Emerald Lake under water rights decreed by the State. Another issue is the potential withdrawal, subject to valid existing rights, of the river corridor from all forms of mineral entry or disposition under the general mineral leasing laws prior to January 1, 1984, the date of general withdrawal established by the Wilderness Act of 1964 (P.L. 88-577).

The study and assessment concludes that because no specific water development project plans have been designed or submitted for Presidential approval (under Wilderness Law), effects on water development exist only as an opportunity cost. Similarly, since there is no active mineral production or exploration in the river corridor, potential mineral effect is viewed as an opportunity cost. The effect to other segments of the local or regional economy are minimal or non-existent because management under the Wilderness Act has previously constrained direct land uses for economic development.

II. Alternatives considered were formulated through application of Principles and Standards for Planning of Water and Related Land Resources. Three alternative plans are considered:

ALTERNATIVE PLAN A - Recommend that the Los Pinos River and its tributaries not be included in the National Wild and Scenic Rivers System.

ALTERNATIVE PLAN B - Recommend that all eligible segments of the Los Pinos River and its tributaries of Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide and Sierra Vandera be included in the National Wild and Scenic Rivers System.

ALTERNATIVE PLAN C - Recommend that all eligible segments of the Los Pinos River and its eligible tributaries (named above) except Lake Creek be included in the National Wild and Scenic Rivers System.

III. Environmental impacts associated with the recommended action include protection of the free flowing character of about 54 miles of streams and protecting the outstandingly remarkable scenery of 17,300 acres of wilderness landscape in the river corridor. Irretrievable effects include the opportunity cost of water impoundment at Emerald Lake and mineral exploration in the river corridor.

IV. List of Governmental Agencies Reviewing this Draft Environmental Statement and River Study Report.

Federal

Environmental Protection Agency
 U.S. Department of Agriculture
 Forest Service, Soil Conservation Service
 U.S. Department of Interior and its concerned agencies.
 U.S. Department of Energy
 U.S. Department of Commerce
 Federal Highway Administration
 Water Resources Council
 Southern Ute Tribal Council

State

State agencies as identified by the Colorado Division of Planning (State Clearing House)

County

Board of County Commissioners, Hinsdale County, Colorado

Additional copies are being sent to organizations and individuals who are affected by or contributed to the study. Distribution of the Draft to the Public at Large in the local area will utilize the library system which includes:

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I. INTRODUCTION

A. The Study

The 1975 Wild and Scenic Rivers Act, Public Law 93-621, January 3, 1975, designated the Los Pinos River, along with eleven other Colorado rivers, for potential addition to the National Wild and Scenic Rivers System. Completion date for the study is October 2, 1979, when the study and recommendations must be submitted to the Congress.

B. Objectives

This environmental statement evaluates the attributes of the Los Pinos River and presents various alternatives and a recommendation to the President and Congress. The recommendation is jointly made by the United States Forest Service and the Colorado Department of Natural Resources.

Two objectives were identified:

1. Determine suitability of the Los Pinos River for inclusion in the Wild and Scenic Rivers System.
2. Recommend for future management of the river.

C. Location

The study covers the Los Pinos River from its source in the San Juan Mountains down to the Granite Peak Ranch, including tributaries and headwaters. This portion of the Los Pinos River in southwestern Colorado north of Bayfield, Colorado, is within the Weminuche Wilderness. Figure I shows a map of the river study and its related region of influence.

The Los Pinos River, a tributary of the San Juan River, is located in Hinsdale County, but its regional influence extends into La Plata and Archuleta counties. Resource use conflicts of the river and its immediate environment are minimized because of wilderness status. Timber harvest, road construction, and developed recreation sites never occurred and are prohibited in the future. Imprints of the early mining era are absent because gold, silver, and other base metals were not found by the hordes of prospectors that searched throughout Colorado during the mining heyday of the last century.

D. Issues and Concerns

An essential part of this study was to obtain public thoughts concerning the Los Pinos River. The following are the major issues expressed by the public:

- Designation would foreclose the opportunity for the Pine River Irrigation District to develop their water storage rights, obtained under State decree, at Emerald Lake.
- Designation would attract additional recreationists which could result in the depreciation of wilderness values through overuse.
- Designation would foreclose new entry for mineral prospecting in the Wild River Area.

E. Other Management Considerations

In 1978, the San Juan National Forest developed proposed interim management direction for the Weminuche Wilderness. The objective of the proposed management is to maintain, protect, and preserve the physical, ecological, and social values of the Wilderness. Attainment of this objective requires restrictive controls on numbers of users and activities. These controls are tied to the capability of the Wilderness to absorb the uses permitted by Wilderness law, regulation, and policy.

Section 10(b) of the Wild and Scenic Rivers Act says that when a river is within classified wilderness, it shall be subject to both the Wilderness Act and this Act. In case of conflict between the Acts, the more restrictive shall apply. Proposed management for the wilderness resources of the Weminuche are far more restrictive than needed to achieve the objectives for managing wild, scenic, or recreational rivers. Two exceptions exist:

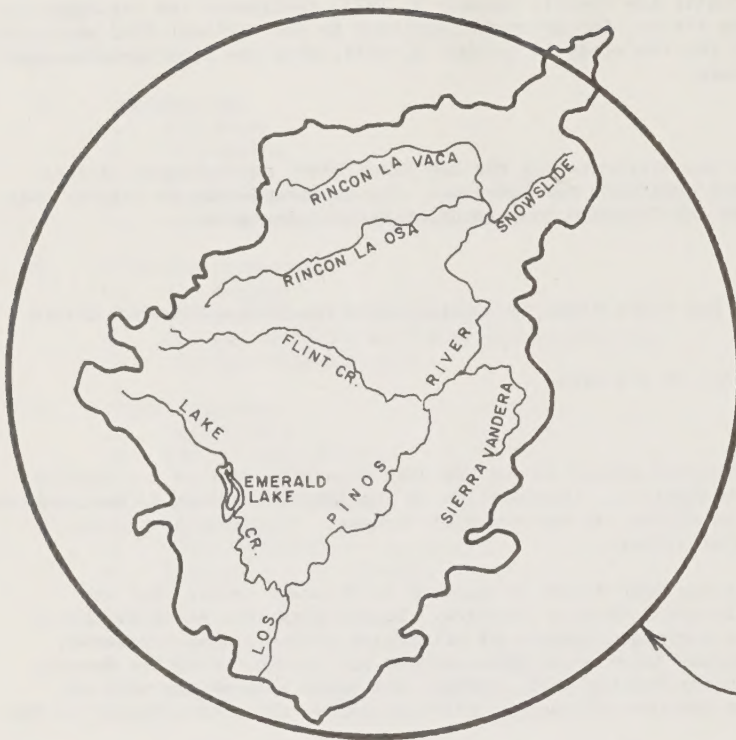
- Potential or planned water resource developments that alter the free flowing character of a designated river are prohibited by wild and scenic rivers designation. The Wilderness Act (Section 4(d)(4)) does authorize the development of water resources with Presidential approval.
- The Wild and Scenic Rivers Act (Section 9(a)(iii)) provides that the river corridor (the bed, the bank, or lands situated within one-quarter mile of the bank), subject to valid existing rights, will be withdrawn from all forms of appropriation under the mining laws and disposition under the mineral leasing laws. The Wilderness Act will effectuate the same action on January 1, 1984. The river is currently under a temporary mineral withdrawal during the period of study.

The river corridor does not contain any private lands, thus negating the need to consider rights-of-ways and scenic easements.

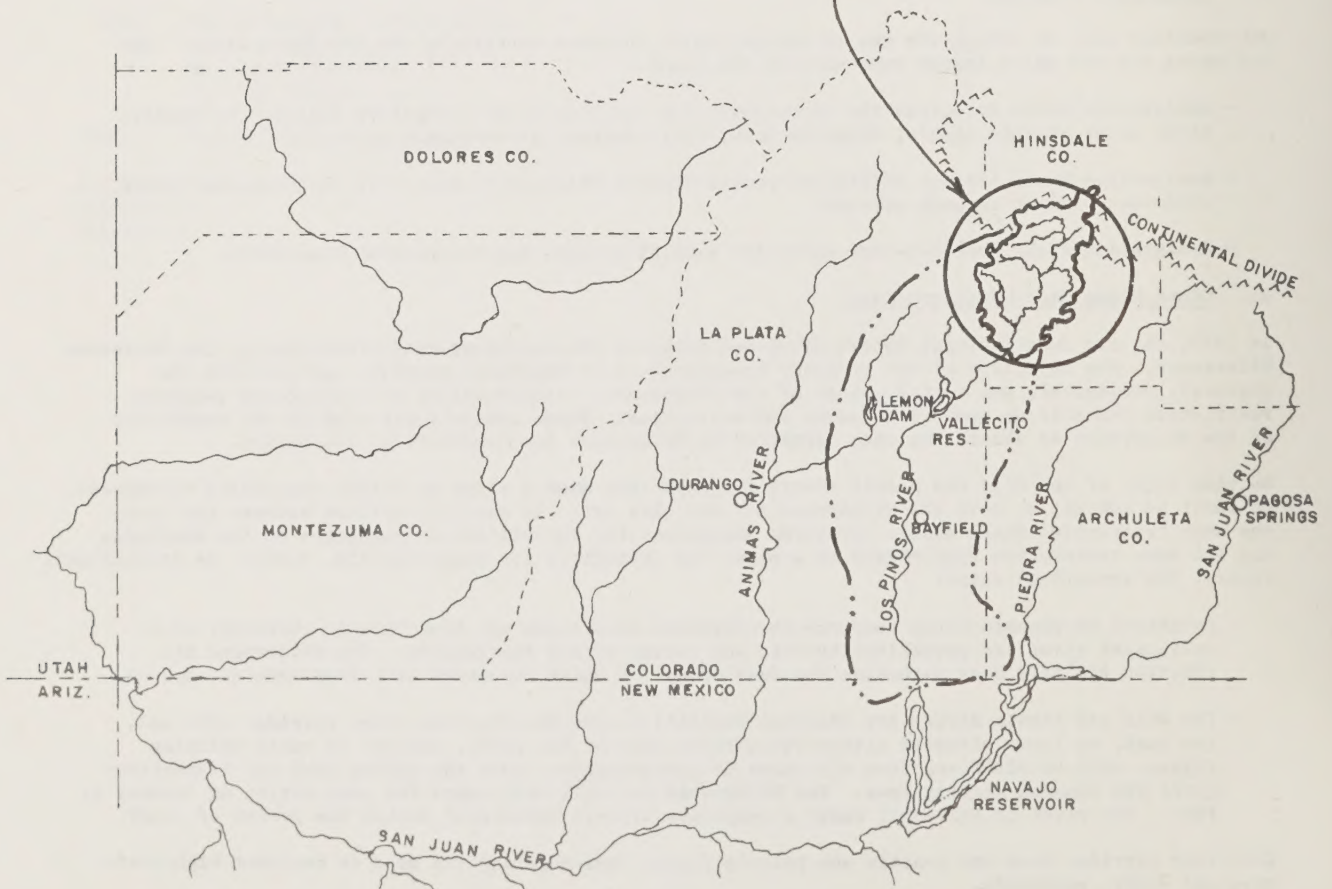
FIGURE I

LOS PINOS RIVER STUDY AREA AND REGION OF ECONOMIC INFLUENCE

- ~~~~~ RIVERS
- COUNTY LINES
- LOCAL REGION OF ECONOMIC INFLUENCE



LOS PINOS RIVER
STUDY AREA



II. AFFECTED ENVIRONMENT

The Los Pinos river corridor is located in 97.5 square miles of rugged mountainous terrain in the Weminuche Wilderness. Scenery of the basin is particularly spectacular as glaciers and streams have carved deep canyons into ancient Precambrian metamorphic and granitic rocks. These geologic processes have left intervening serrated ridges with many peaks reaching skyward in excess of 12,000 to 13,000 feet above sea level.

A. The Region

In the larger context, the Los Pinos River corridor is a part of an area of similarly spectacular mountainous terrain known as the San Juan Mountains. These mountains, with their interlaced river valleys and the plains to the southwest, have served as a treasure house of natural resources for nearly a century. From the earliest settlement to now, the San Juan Mountains and basin have provided plentiful amounts of valuable minerals to the nation, have pastured countless cattle and sheep, have furnished many millions of board feet of lumber, along with being a haven for many of the Colorado's wildlife and bird species. An ever increasing number of tourists and vacationers visit the area seeking respite from their work day routines.

The deep snows that accumulate each winter provide water for human needs as far away as California and Texas. Under international compacts, even Mexico vies for its share of the San Juan Mountain's aquatic bounty.

The region in this report includes a portion of the west slope of the San Juan Mountains and a limited extent of foothills, low lands, and surrounding plateaus in the southwestern part of Colorado. This area roughly corresponds with what could be described as the southeastern quadrant of Colorado Planning and Management Region No. 9.

The physiographic high point of the region is the Continental Divide in an area where it bends from the east to the west in a large sweeping arc, which is a major variation from its general north-south direction in Colorado. In the headwater areas of the region, where not too steep and rocky, the lower slopes are mantled by dense forests of spruce, fir, pine, and aspen. Large areas also extend above the tree zone as bold rocky peaks or slopes and pockets carpeted by low plants. Descending from the mountainous heights, the lower valleys give way to the plateaus and wide open valleys that extend south and west for hundreds of miles.

Climatic conditions vary with elevation. The higher mountainous slopes receive larger amounts of moisture, mostly in the form of snow, than does the peripheral belt of the lowlands and the plateau country. Heavy snows generally occur in the higher mountains between October and June. The prevailing winds blow from the southwest, hence bringing in moisture-laden air from the Pacific areas of frontal buildups. Local breezes seem to be typically controlled by topographic features. The lowlands are drier and have milder winters than the mountainous areas.

Vegetation of the region is as diverse as the soils and parent geology. The highest reaches of the region are rock and alpine tundra. The small alpine plants composing the mat-like vegetation grasp at life in areas where there is sufficient soil for nourishment. The short summers compress their cycle of floral activity into two short months, which any night may have freezing temperatures.

Below the alpine zone are the forests of spruce and subalpine fir, followed in descending succession by white fir, Douglas-fir, ponderosa pine, pinyon, juniper, and the brushy species of the lowlands. Tree species may be found in pure or mixed stands at any elevational zone. Aspen is found in pure and mixed stands with spruce, fir, and pine. The open glades of mature aspen enrich the soils with their leaves each fall. The enriched soils provide the mix of vegetation that has nurtured countless deer, elk, cattle and sheep.

Southwest Colorado has been occupied by people from prehistoric times to present. Archaeological studies have placed prehistoric man in the area as early as 11,000 and 9,000 B.C.

Later prehistory saw the Anasazi widespread over the Southwest. This culture developed most notably in southwest Colorado (e.g., Mesa Verde and Chimney Rock). The earliest of this culture were the Basketmakers, beginning around 1 A.D., who rapidly developed into the large agriculture Pueblo villages abandoned in the 13th century.

In historic times the region was occupied by the Ute Indians. In 1765, Captain Juan Marie de Rivera made the earliest recorded expedition along the San Juan Mountains to the Gunnison River in search of precious metals. He was followed by Padre Francisco Escalante in 1776, who skirted the southern part of the region. Escalante is credited with naming the Los Pinos River.

The Southern Ute Indian reservation was reduced in 1874, opening the area to prospectors and mining activities which were followed by an influx of pioneers. The fur trappers and miners soon gave way as settlement makers, homesteaders and lumbermen furthered and sustained the regional towns of Bayfield, Pagosa Springs and Durango, which are the region's trade centers.

B. The Los Pinos River Corridor

The study, as mandated by the Congress, encompasses an approximate one-half mile wide corridor along the Los Pinos River and its tributaries within the Weminuche Wilderness (formerly the San Juan Primitive Area).

1. Geologic Prelude

Continuous mountain-building revolutions are shown in the rocks and formations of the river corridor. Six formations of the Precambrian era exist in the river corridor. Little is known of the geologic processes during the long period of time between the Precambrian and Tertiary period. The sedimentary rocks and formations of these time periods are not found in the river corridor.

During the Tertiary period, the river corridor was subjected to disruption of mountain building forces. Volcanic series of the period laid down nine formations and ash flow units. The violent volcanic series were separated by glacial episodes, block faulting, uplifting, and warping (Atwood and Mather, 1932).

The Quaternary period began when the Los Pinos and its tributaries had succeeded in trenching their channels in the lower zones of the region to the south of the study corridor.

2. Present Environment

The long periods of geological processes have resulted in the present landform. Elevations near the river corridor vary from 7,900 feet above the sea to the 13,821 foot Rio Grande Pyramid, a landmark used by the early Spanish during their quest for gold.

The lower tributary valleys containing the river corridor are V-shaped with intervening ridges that are quite sheer. The upper valleys containing the river corridor near the Continental Divide contrast greatly with the lower valleys. The upper valleys are wide with gentle slopes and steps rising up to granite apices.

In the headwater areas of the river corridor, the valleys are glaciated with cirques, tarns and potholes. These are now the numerous lakes and small ponds that serve as natural storage places throughout the year to keep the Los Pinos and its tributaries alive.

Stream gradient of the tributaries are fairly constant. The gradient of the mainstem of the Los Pinos stair-steps its way down from the Continental Divide (see Figure II).

Summer temperatures rarely exceed 80 to 85 degrees. Cold weather minimums often fall below 10 to 20 degrees below zero Fahrenheit with minus 40 to 50 degrees during the coldest periods of winter. Average annual precipitation is between 25 and 50 inches and occurs chiefly in the form of snow. High intensity rain showers occur in localized areas during the summer. Hail and sleet are common in the alpine areas during the summer rains.

The river corridor traverses five major soil type associations whose origins are from a melding of geologic and climatic processes. The majority of the soils cover the balance of the area. Soils on footslopes within the corridor are dark, deep, and fertile, whereas those at the extremities of the corridor are light colored, shallow, and range between low and moderate fertility. All of the soils in the corridor are susceptible to erosion when the vegetative cover is disturbed.

The following table summarizes the broad cover types within the wild and scenic river study area.

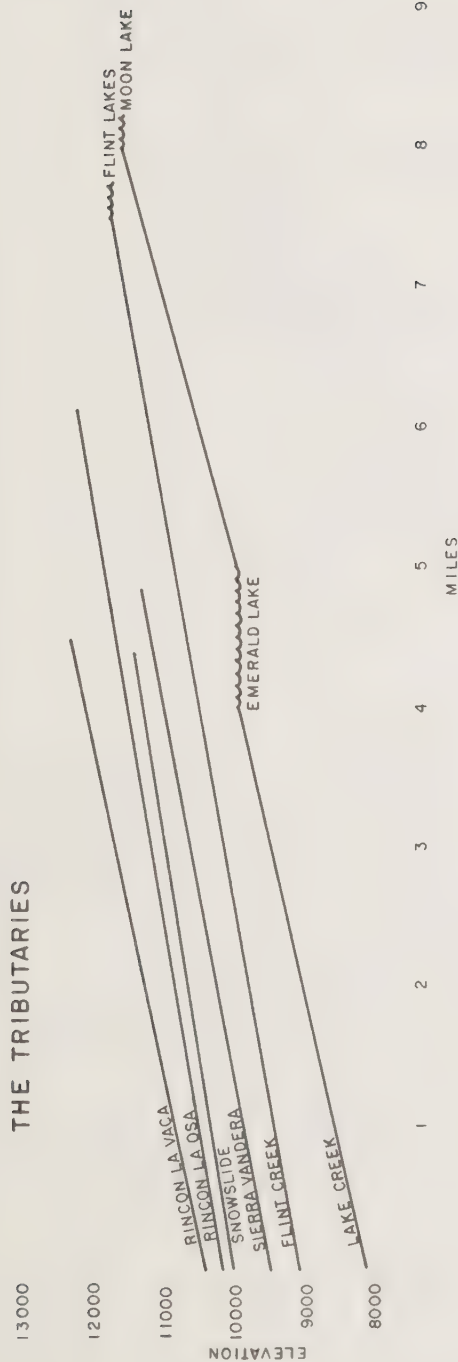
TABLE I

LOS PINOS BASIN COVER TYPES

<u>Type</u>	<u>Acres</u>	<u>% of Area</u>
Spruce Fir (Mixed & Pure Stands)	52,400	84%
Douglas-fir	1,700	3%
Aspen	700	1%
Stands of Dwarfed Spruce at Timberline	1,100	2%
Rock and Dry Grasses	5,700	9%
Willow and Wet Grass Bogs	300	Less than 1%
Lakes and Ponds	600	Less than 1%

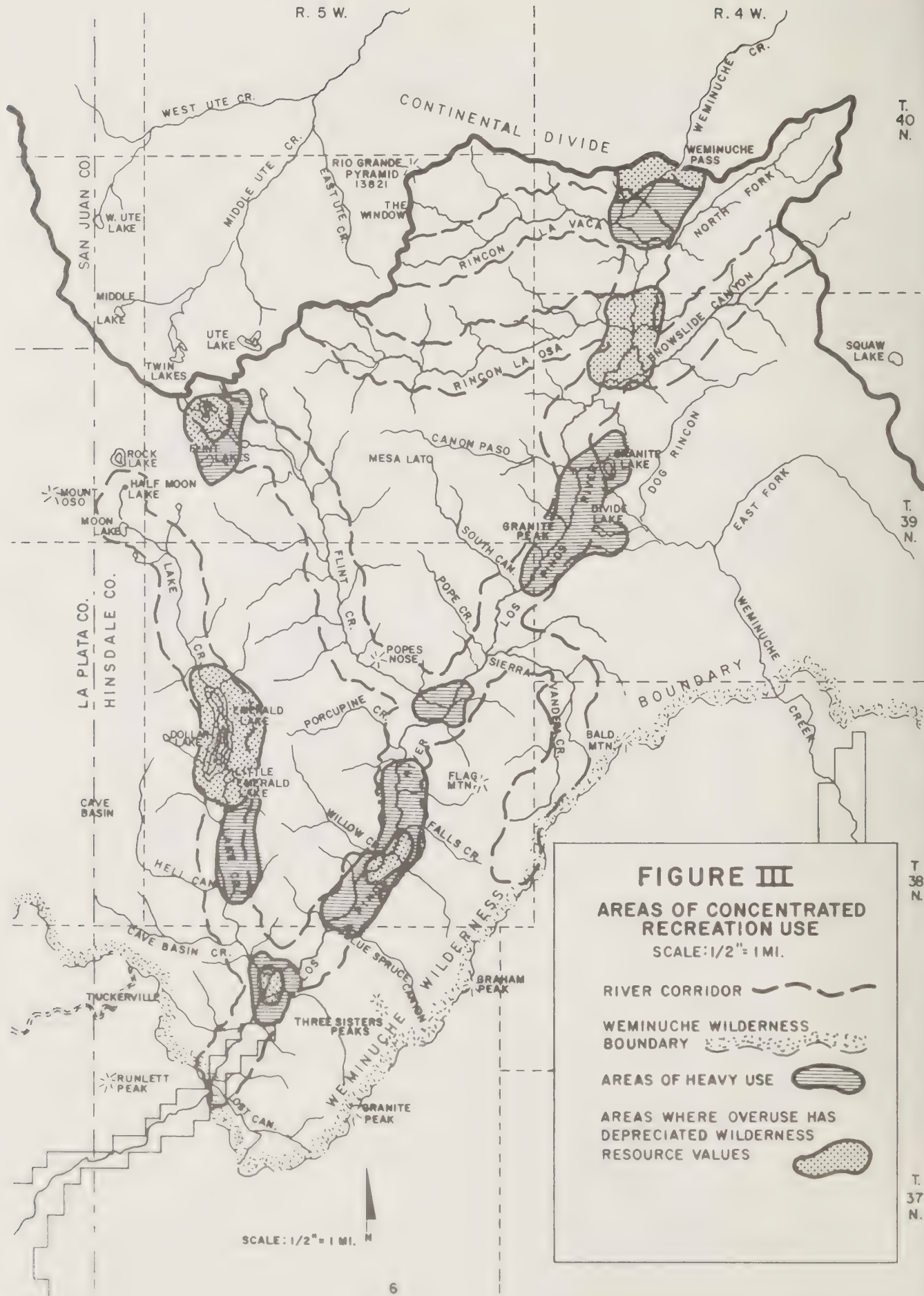
FIGURE II **AVERAGE STREAM VALLEY GRADIENT**

THE TRIBUTARIES



THE LOS PINOS





The Federal Register (40-127, V) contains a list of 23 endangered and 17 threatened candidate plant species for Colorado, as determined by the Smithsonian Institute. It remains to be determined where, or if, any of these species are present in the river corridor. There is a slight chance that species listed under the following genera might occur: Arabis, Lesquarea, Stellaria, Astragalus, Oxytropis, Eriogonum, Druba, and Mertensia.

3. River Corridor Resources

Wilderness:

The Weminuche Wilderness was established January 4, 1975, by Act of Congress. At 401,600 acres, it is the largest component of the National Wilderness Preservation System in Colorado. Eight areas along the river corridor experience heavy recreation use; six of the areas contain locations of depreciated wilderness resource due to overuse (see Figure III).

Fish and Wildlife:

Fish and wildlife species inhabiting the Los Pinos river corridor are diverse, being comprised of 225 known species. Of the 225 species, seven are fish, forty-four are mammals, eleven reptiles, four amphibians, fourteen waterfowl, six upland game birds, six shore birds, seventeen raptors, and the remaining 116 species are song birds.

Elk, mule deer, big horn sheep, and black bear are the predominate big game species of the river corridor. Except for the lower portions, the corridor is not hunted heavily. The need to establish hunting camps in a wilderness probably is a large factor that discourages a high population of hunters.

Waters of the Los Pinos provide high quality fishing. Fish species in the river and lakes are primarily cutthroat trout. However, all the lakes are stocked except Emerald Lake. Emerald Lake is considered as one of the largest and last rainbow trout lake fisheries in Colorado. It is a wild trout fishery which has a self-sustaining population yielding relatively large fish. Lake Creek, Flint Creek, Rincon La Osa, Big Flint Lakes, Moon Lake, and Dollar Lake are considered as good to excellent by "Tim Kelley's Hunting and Fishing Guide". Because of heavy use the State of Colorado is considering imposing restrictive creel limits and an artificial lure only restriction to maintain the quality fishing.

Two notable species' situations include the grizzly bear and wolverine. The last recorded sighting of a grizzly in the State of Colorado occurred near Emerald Lake in 1951. Wolverines continue to be the subject of reported sightings, but none of the reports have been verified. The State of Colorado has classified both the grizzly bear and wolverine as endangered.

In summary, terrestrial wildlife species in the Los Pinos river corridor are generally similar to all of Colorado's high mountain valleys. In previous studies, wildlife-vegetation associations were developed. These associations, displayed in Appendix A, are quite broad because of overlap, edge effect, and the transient nature of most species.

Water Resources:

Average discharge of the Los Pinos River above Vallecito Reservoir is estimated to be 200 cubic feet per second (cfs), or 150,000 acre feet (AF) annually. No gauge was ever maintained at the lower end of the study river corridor; however, from 1928 until 1940 the Pine River gauge, about two and a quarter miles below the present site of Vallecito Reservoir, recorded stream flows before construction of the dam. The average flow for this time period was 345 cfs, or 249,780 AF annually. This figure includes the flows of Vallecito Creek. A gauge was installed on Vallecito Creek in 1963.

To estimate the flow of the Los Pinos, the hydrograph in Appendix B was protracted from the flows of Vallecito Creek and subtracted from the monthly inflow at Vallecito Reservoir obtained from U.S. Bureau of Reclamation records. June provides the highest water discharge. The snow melt months of May and June produce more than 50 percent of the stream runoff. Summer thunderstorms may have tremendous periodic impact on stream flows, but have only a small effect on seasonal runoff.

A baseline water quality study of the river, done in 1976, concludes the river's water quality to be excellent. Of the parameters tested, the water quality is higher than recommended Federal Water Quality Criteria and Colorado Class B1 Standards for recreation and wildlife streams.

At the headwaters of the Los Pinos are two transbasin water diversions: the Pine River-Weminuche Pass Ditch and the Weminuche Pass Ditch. These ditches divert water from the Los Pinos drainage to the Rio Grande drainage.

The Weminuche Pass Ditch, originally the Raber-Loehr, began diverting water from Rincon La Vaca to Weminuche Creek, tributary to the Rio Grande, in 1937. It has a decreed right for 20 cfs.

The ditch is on the Continental Divide and therefore is restricted by snow pack during some irrigation seasons. However, during most years, this ditch supplies a substantial amount of water to irrigators on the Rio Grande side.

The Pine River-Weminuche Pass Ditch, formerly the Fuchs Ditch, diverts water from the North Fork of the Los Pinos to Weminuche Creek. It has a decree for 18 cfs. The ditch, also located on the Divide, is faced with the same limitations as the Weminuche Pass Ditch. This ditch went into service in 1937 also.

Other water use projects were studied although never reaching detailed planning and development. The Emerald Lake proposal, power site withdrawal number 219, would have increased the capacity of the lake by 9,000 AF, thus regulating the flow of Lake Creek. In the same proposal the Divide Lakes Dam, 21,000 AF, would have regulated the waters of the Los Pinos.

Additionally, a Forest Service report in 1940 outlined a development similar to the Emerald Lake proposal. Neither plan, according to the Chairman of the Federal Power Commission in 1969, was then economical. At that time, the existing power site withdrawal was cancelled.

The Pine River Irrigation District has a decreed right to store 7,077.70 AF of water in Emerald Lake. This decree (Adjudication 6/12/34, Appropriation date 10/10/1894) is to store water at Emerald Lake for later use. During the early part of the century, a log dam was constructed in the natural spillway to raise the level of the lake. The dam has subsequently been removed. The irrigation district, at some future date, plans to apply for a permit to store water at Emerald Lake.

There are no other known planned water use developments in the river corridor.

Minerals:

There is no known production of fuel or non-fuel minerals in the river corridor. The historic mining activity that affected other parts of Colorado did not occur in the Los Pinos river basin. Prior to 1969 there were no claims in the river corridor. There were three groups of claims in the basin, but not in the corridor (see Figure IV).

In 1969, a group of claims were filed on at the Hinsdale County courthouse. Unfortunately, the filings do not have adequate location descriptions, but are believed to be near Emerald Lake. The only other area of claimant activity is a block of claims filed in 1976-77 in the Cave Basin area to the south of the Lake Creek segment of the river corridor. During 1969, prior to the study of the San Juan Primitive Area for wilderness classification, the U.S. Geological Survey, with contributions from the U.S. Bureau of Mines (Steven and Schmitt, 1969), made an evaluation of mineral potential for the area (Weminuche Wilderness). Appendix C contains applicable excerpts pertaining to the Los Pinos area. The report concludes that, based on mineral samples taken from claims in the Emerald Lake area, "the deposit appears to have little economic significance". A similar review of mineral potential in the Cave Basin area concludes that, "an organized program of relative shallow drilling may produce additional quantities of gold, silver, copper, and zinc".

Fuel sources such as gas, oil, and coal have not been found in the river corridor and no mineral leases exist. The river corridor is not in any known coal leasing area, nor are there any identified areas for geothermal energy development (EMARS, 1976).

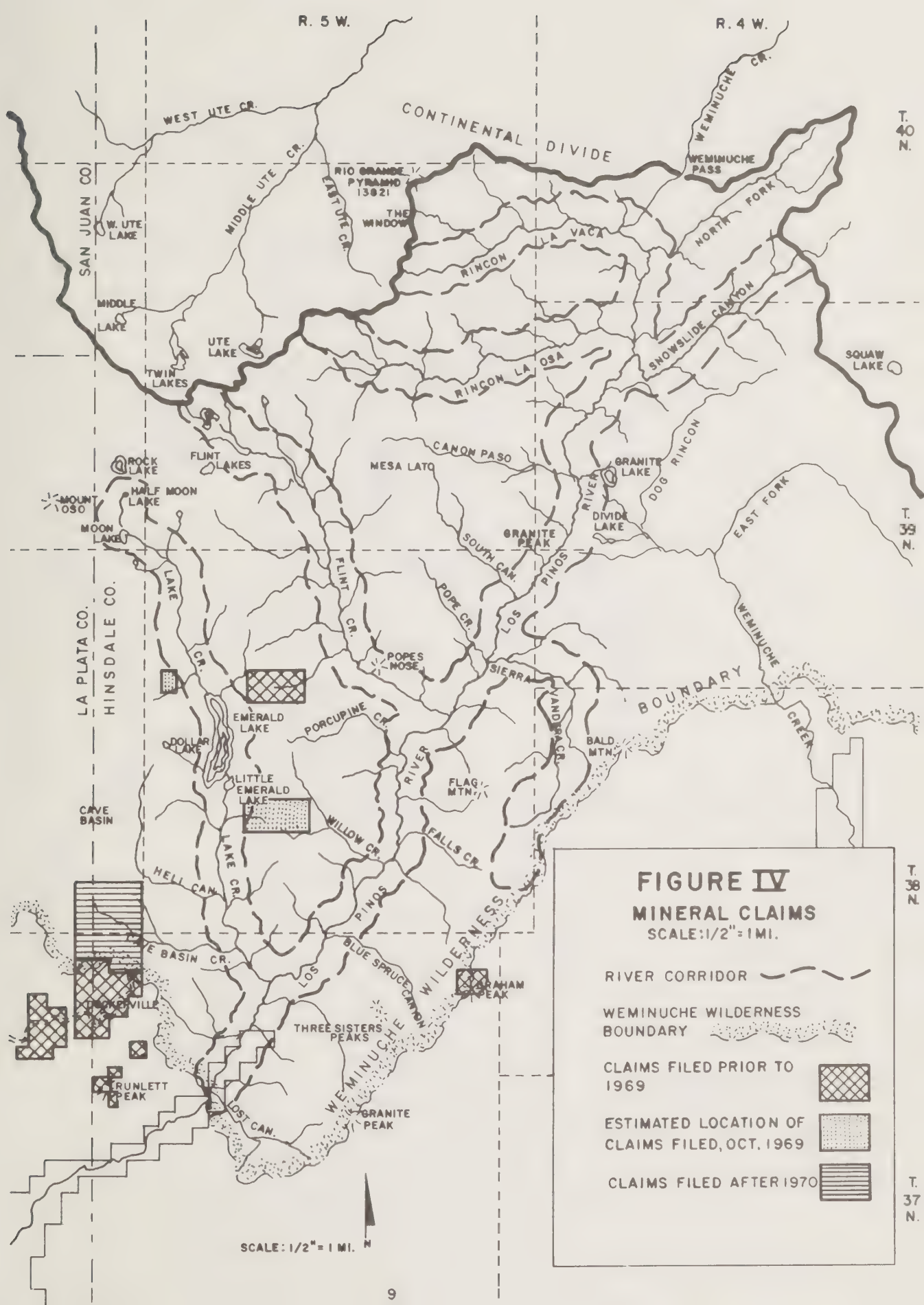
Rock quarrying and gravel operations have not occurred in the corridor because of the area being in primitive and then wilderness status.

Domestic Livestock:

Historic livestock grazing in the study corridor has been by sheep, cattle, and recreation pack stock. The river corridor traverses one cattle allotment and three sheep allotments.

The sheep allotments affected by the river corridor have a measured carrying capacity of 11,270 animal unit months. However, in the past decade the economic conditions involved in the sheep industry have been very unsettled, resulting in a general decline of sheep grazing. Currently (1978) there are only 850 sheep grazing on the Upper Pine River Allotment. The other allotments affected have been inactive.

The lower river, below Lake Creek, is included within the Vallecito cattle allotment. This portion, while providing an important role in the allotments management, does not contribute a significant amount of carrying capacity when compared to the large area of the entire allotment.



II

Outdoor Recreation:

The wilderness setting of the Los Pinos has attracted an ever-growing number of recreationists into the river corridor. Reported recreation activities include: camping, enjoying unique and unusual scenery, fishing, hiking, hunting, mountain climbing, and more recently nature study and acquiring general knowledge of the wilderness environment. Commercial packer-outfitter service was originally instrumental in providing a means of enjoying the wilderness environment. This service has been declining since 1972.

The Los Pinos river basin is divided into two recreation management units, Lake and La Osa, under proposed wilderness management. These management units are further subdivided to establish area recreation user capacity and aid managers in distributing recreation use (see Figure V).

Tables II and III show the historic use and proposed user limits by unit and sub-units of the recreation management units.

TABLE II
REPORTED RECREATION USE
LOS PINOS RIVER BASIN
(Visitor Days)

YEAR	RECREATION MANAGEMENT UNITS			
	Lake Sub Unit 1	Lake Sub Unit 2	Lake Sub Unit 3	La Osa Sub Unit 1
1977*	14,200	6,700	4,000	4,000
1976	17,300	8,800	2,300	4,200
1975	15,000	7,600	2,000	3,600
1974	12,800	6,500	1,700	3,200
1973	12,800	6,500	1,700	3,100
1972	11,900	6,100	1,600	2,900
1971	10,000	5,100	1,300	2,500
1970	7,400	3,800	1,000	1,800

Data Source: Annual Recreation Reports, FS Recreation, Information Management System

*Forest Service Use Reports coordinated with CSU Wilderness User Study.

TABLE III
HISTORIC USE AND PLANNED USER LIMITS

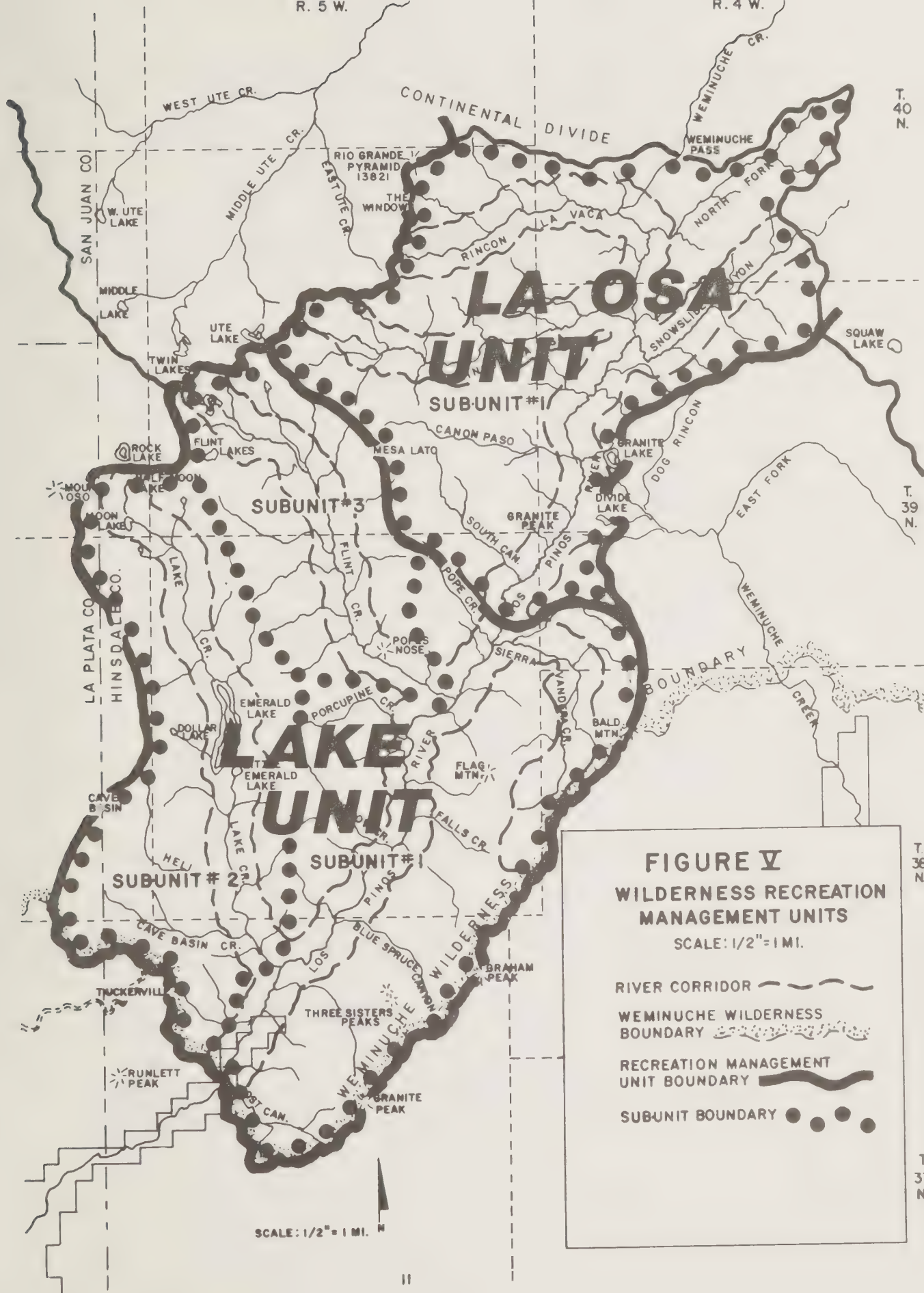
Recreation Management Units	Average PAOT* 1970-1976	Average PAOT 1977	Planned PAOT Limit	Visitor Day Limit
Lake, Sub Unit 1	62	79	55	9,350
Lake, Sub Unit 2	32	40	32	5,440
Lake, Sub Unit 3	9	16	38	6,460
La Osa Sub Unit 1	<u>15</u>	<u>20</u>	<u>123</u>	<u>20,910</u>
TOTAL	118	155	248	42,160

Source: Proposed Management Plan for Weminuche Wilderness

*PAOT: Persons At One Time to maintain an acceptable degree of solitude.

R. 5 W.

R. 4 W.



T. 40 N.

T. 39 N.

T. 38 N.

T. 37 N.

II

According to Table III, overall use can increase up to the PAOT limits for each sub unit. The provision for additional increase of use is for a management system that distributes the use to the non-river corridor areas of the sub units.

Existing trails along the river corridor are numbers 523, 524, 525, 527, 528, 564, and 653. Trails 532, 539, 564, 584, 655, 673, 818, and 824 provide access to the river corridor from other locales of the Weminuche Wilderness (see Figure VI).

Historic and Cultural:

The river corridor contains three historic locations that are currently being evaluated for eligibility to the National Register of Historic Places. Near the river corridor on Rincon La Vaca there are also two natural landmarks being considered for nomination (see Figure VII).

The proposed historic sites are:

Site #27/05/0004 - Granite Peaks Guard Station

The cabin was constructed sometime between 1907 and 1908 as a station for the administration of land within the newly established San Juan National Forest; the Forest was established June 5, 1905, by proclamation of Theodore Roosevelt. Down through the years the original character of the cabin was maintained, although its use changed to temporary headquarters for Forest Service crews working in the wilderness.

Site #27/05/0005 - Ditch Crew Quarters

This cabin was constructed during 1941 as a building to house employees working on the private irrigation ditches on Weminuche Pass.

Site #27/05/0001 - Last Grizzly Bear Sighting

This was the location of the last verified sighting of a grizzly in the State of Colorado. Since this time, no grizzly bears have been seen in the San Juan Mountains in Colorado.

The two cabins are considered eligible until such time they are determined to be ineligible. Under this provision, they are afforded protection until such time their eligibility to the National Register is determined.

The proposed natural landmarks are:

Site #27/05/0002 La Ventana (The Window)

This rock formation was used as a pass and a landmark during the early Spanish gold expeditions. Also carved into the rock on one side are the words "Stewart's Gap", referring to an early calvary expedition that passed through the area in 1858.

Site #27/05/0002 - Rio Grande Pyramid

This prominent pyramid-shaped peak was used by Spaniards as a landmark in their quest for gold. The peak is clearly visible from the northern New Mexico lowlands.

C. Current Economic and Social Considerations

The economy of the region has historically been tied to mining, agriculture, and lumbering. Mining activity, both fuel and non-fuel, is largely in peripheral areas surrounding the region. The mining industry is subject to wide fluctuations in price and further environmental controls, leaving this economic sector uncertain.

Irrigation is the cornerstone of agriculture in the region. Ranching and feed grain production are the main agricultural activities. Facing uncertainties of weather, price, and production costs, the emphasis of the small family farm is fast disappearing. Many of the region's ranchers and farmers have capitalized the value of their lands by selling off portions for low density subdivisions.

The lumber industry has similar problems: widely varying prices, increasing development costs, and increased transportation costs. Although the region's lumber industry has not experienced the "boom/bust" of the mining industry, it does not provide regional economic stability.



FIGURE VI
RIVER CORRIDOR TRAILS
 SCALE: 1/2" = 1 MI.

RIVER CORRIDOR ———
 WEMINUCH WILDERNESS
 BOUNDARY - - - - -
 TRAILS
 TRAIL NUMBERS 000

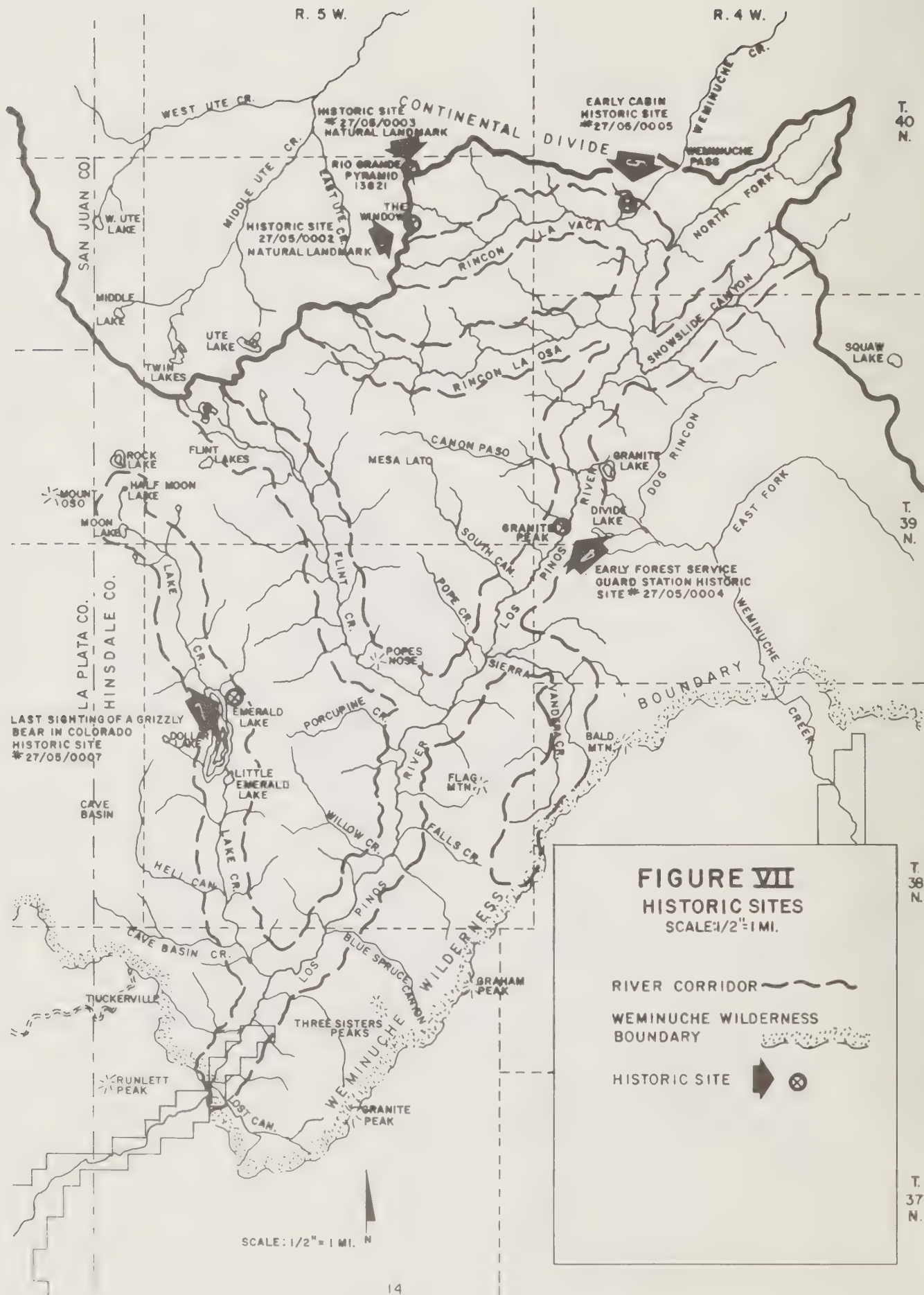


FIGURE VII
HISTORIC SITES
 SCALE 1/2" = 1 MI.

RIVER CORRIDOR ———

WEMINUCHE WILDERNESS
 BOUNDARY - - - - -

HISTORIC SITE (cross in a circle)

Tourism and outdoor recreation in the last several decades has ascended to primary economic importance. During this same period, trade, service, construction and government have steadily expanded. The national population shifts toward rural areas and the sun belt is reflected in the region's population growth. Aside from the national trends, tourism has introduced many people to the region's magnificent scenery, mild climate, and opportunities for outdoor recreation. Many families first visited and then returned as full time residents. Table IV shows the general upward trend in the region's population.

TABLE IV
REGIONAL POPULATION

	<u>1/</u> <u>1950</u>	<u>1/</u> <u>1960</u>	<u>1/</u> <u>1970</u>	<u>2/</u> <u>1973</u>	<u>3/</u> <u>1980</u>	<u>3/</u> <u>1990</u>	<u>3/</u> <u>2000</u>
Archuleta County	3,030	2,629	2,733	2,808	5,000	6,500	7,500
Pagosa Springs	1,379	1,347	1,360	1,426	1,665	3,000	3,500
La Plata County	14,880	19,225	19,199	21,348	28,320	--	34,000
Durango	7,459	10,530	10,333	10,989	--	--	--
Bayfield	335	332	320	343	--	--	--
Ignacio	--	--	613	658	--	--	--

1/ Source of data U.S. Department of Commerce, Bureau of the Census

2/ 1973 Population Estimates for Counties and Incorporated Places in Colorado, Bureau of the Census

3/ Estimates by County Planners

The river corridor, while being a part of the region, has not provided the past economic stimulus to the region as did its other parts. The early prospectors did not find the rich veins of gold and silver as were found in other parts of Colorado. The early logger opted for the more readily accessible timber stands in the lower valleys and foothills. Livestock grazing in the Los Pinos basin, once a major economic contribution to the region's economy, has experienced a decline.

The Los Pinos River and the outdoor recreation opportunity it affords has provided a small contribution to the region's economy. The economic values it generates within the region is fairly low when compared to the recreation use and values of adjacent forest and private lands. A special study would be needed to identify and segregate the contributions the Los Pinos River makes to the region's economy. However, since recreation use in the river corridor is limited through wilderness management consideration, a special study was not undertaken.

Transportation into the region is served by Colorado Highway 160 from east to west and Colorado Highways 550, 84, and 660 out of Utah. Each of these highways intersect Colorado #160 at various locations to serve the region. Air service into La Plata field provides connections to Denver, Phoenix, and Albuquerque. Once the region had rail service, but these lines were abandoned and the only existing railroad, landlocked between Durango and Silverton, is a nationally known narrow gauge railroad serving as a major summer tourist attraction.

D. Regional Expectations

National demand for fuel and energy minerals could have significant impact on other resources of the region.

The anticipated mineral situation in the river corridor is that the mining industry will probably be hesitant to undertake the high costs associated with exploration in the wilderness. As coal reserves are developed in other portions of the region, additional demands for water from the Los Pinos River will be generated. Renewed activity of the mining industry (mainly coal) is expected to attract a larger number of people into the region.

Outdoor recreation uses in the river corridor will be of the same kind as presently allowed in the wilderness. The interim management direction for the wilderness is to limit visitors, when the established carrying capacity is reached, to prevent further depreciation of wilderness character and values. The net effect on the region's economy caused by the visitor regulation is expected to be insignificant.

With the passing of time, as more and more people settle in the area, greater conflicts for water will develop. As the communities expand, there will be a greater demand for domestic water. To compensate for additional water needs, the Pine River Irrigation District will probably make an application to construct a dam at Emerald Lake to put their decreed water storage rights to beneficial use under state law.



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1. Rio Grande Pyramid, a peak that can be seen from parts of northern New Mexico. It was used as a landmark by early explorers. The square notch at left center is the Window.
2. The Popes Nose is one of the large granite outcrops on Flint Creek



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- 1 A 1932 photo of the Granite Peak Guard Station.
- 2 Remains of wier used to measure water below Emerald Lake.
- 3 Granite cliffs near the confluence of Lake Creek and the Los Pinos River.

III. STUDY CRITERIA

A. Eligibility Criteria

Section 2(b) of the Wild and Scenic Rivers Act states:

"(b) a wild, scenic or recreation river area eligible to be included in the system is a free flowing stream and the related adjacent land area that possesses one or more of the values referred to in Section 1, subsection (b) of this Act."

Values listed in Section 1, subsection (b) are "outstandingly remarkable, scenic, recreational, geologic, historic, cultural, fish and wildlife, or other similar values".

The law is supplemented by guidelines issued by the United States Departments of the Interior and Agriculture. These guidelines entitled, "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas Proposed For Inclusion In the National Wild and Scenic Rivers System Under Section 2, PL-90-542" published in 1970, provide the following additional criteria for wild river areas.

1. Free of Impoundments: A wild river should be free of impoundments (a slack water pool formed by man-made structures) except in rare instances in which aesthetic and recreational characteristics are of such outstanding quality as to counter balance the disruptive nature of the impoundment.
2. Generally Inaccessible Except by Trail: There should be no roads or other provisions for overland motorized travel within the river corridor.
3. Shorelines Essentially Primitive: The shoreline and immediate environment is free of habitation and other substantial evidence of man's intrusion.
4. Waters Unpolluted: Water quality should at least meet the minimum criteria for primary contact recreation and aesthetics as interpreted in the Federal Water Pollution Control Administration's "Water Quality Criteria", April 1, 1968.

The guidelines also provide guidelines for water volume segment length. The river should have sufficient volume to permit, during the recreation season, full enjoyment of water related recreation activities and be long enough to provide a meaningful recreation experience. Twenty-five miles in length is the general guide.

B. Evaluation Criteria

These criteria are used to select a recommended plan from the alternatives.

1. Protect and enhance the outstandingly remarkable values determined to be present, protect free flowing character of the river, and retain the natural characteristics that currently exist.
2. Provide for the classification level that limits use and development within the carrying capacity and user limits established to maintain the wilderness character as planned in the Interim Management Direction for the Weminuche Wilderness.
3. Provide a range of benefits that promote improvement in the quality of life by contributions to co-equal objectives of environmental quality and national economic development. The recommended plan should satisfy either needs for environmental quality or national economic development, or both to the extent possible, in the least costly manner.

(Flood Control Act of 1970, Section 209; Principles and Standards for Planning Water and Related Land Resources, 1973.)

4. Be capable of application by the various levels of government and non-governmental interests involved in the decision, as authorized by the Wild and Scenic Rivers Act.
5. Conform to the extent possible with long range goals of the State of Colorado as summarized from the 1976 Executive Order by Governor Lamm, Governor of Colorado.
 - Make specific efforts to protect, preserve, enhance and manage Colorado's wildlife and wilderness area for public benefit and enjoyment.
 - Preserve the beauty of the State.
 - Preserve the agriculture component of the State's economy and prevent unnecessary conversion of prime agricultural land and water suitable for irrigation to non-renewable uses.
6. Consider citizen opinion to insure that substantive comment is reflected in alternative plans to the extent possible, as prescribed by the National Policy; Water Resources Planning Act, 1965; National Environmental Policy Act, 1969.



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1. Riders stop to enjoy the backdrop of the high mountains surrounding the Los Pinos River Basin.
2. Headwaters of the Los Pinos at the Continental Divide. The Divide is about one-third distance from the top of the picture.
3. Shadows of afternoon clouds pass Emerald Lake. Emerald is the third largest natural lake in the State of Colorado.
4. The lower Los Pinos River snakes its way through the granite formation. Photo is downstream view. Vallecito Reservoir is at upper left.



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3

1. View of the lower valley from the Granite Peaks Ranch.
2. Looking across Emerald Lake toward Mt. Oso and Buffalo Peak.
3. The tree studded slopes of the Granite outcrops contain numerous water falls.

IV. ALTERNATIVES CONSIDERED

A. Eligibility

The Los Pinos River above the Granite Peaks Ranch and its major tributaries of Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide Canyon, and Sierra Vandera are eligible for addition to the National Wild and Scenic Rivers System. Other smaller tributaries are not eligible.

Free Flowing Character:

The Los Pinos above the Wilderness boundary, including its major tributaries, meets the criteria for wild rivers as there are no man made impoundments, diversion dams, riprapping or channeling except for the two transbasin diversion ditches. Since these diversions adversely affect the free flowing character of the upper 1.3 miles of the Los Pinos mainstem and its North Fork tributary, these segments were determined to be ineligible.

Length:

The Los Pinos and its major tributaries Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide, and Sierra Vandera approximate 54 miles. This exceeds the general guideline of 25 miles and is considered more than enough to provide a meaningful recreation experience.

Water Volume:

The Los Pinos and its tributaries have enough water in normal years to permit full enjoyment of water-related outdoor recreation activities. Water related activities include fishing, wading, and camping in the riverside environment. During the spring runoff, some hardy individuals float the lower portion of the river. Floating activity is restricted to water craft that can be carried into the wilderness on the users back or by pack horse.

Man's Activity:

The outstandingly remarkable scenery of the Los Pinos River remains untouched because of Primitive Area classification and then Wilderness status. Other than the trail and trail bridge and the Granite Peaks Guard Station, there are no structures or works of man that disrupt the scenic qualities.

Waters of the Los Pinos River and its tributaries meet and exceed all Federal and State water quality standards.

Outstandingly Remarkable Values:

The Act requires the river to possess at least one "outstandingly remarkable" value. The Colorado Department of Natural Resources and the U.S. Department of Agriculture recognize that the Los Pinos possesses outstandingly remarkable scenic values. No other values referred to in the law were found to be outstandingly remarkable.

When compared to the general scenic characteristics of the region, the Los Pinos river corridor stands out as spectacular and distinctive. The same can be said as true when the area is compared to much of the other mountainous area in Colorado. The peaks and granite ridge tops become focal points that cap the strong vertical lines of the deep canyons with their landscapes of massive rock outcrops and precipitous walls. Near the Continental Divide the granite landscape gives way to pyramidal peaks surrounded by the open valleys and slopes of the alpine area. Visual chaos is avoided in the variety of landscape texture created by the numerous chutes and stringers of talus and vegetation that break the solid rock patterns.

Color within the landscape is highly varied. Distinctive patterns occur with the contrasts between the coniferous and deciduous tree stands, the greys of the granites, and areas of riparian vegetation. The corridor and valley sides also have dramatic displays of seasonal color change.

Water forms of the landscape include size variations of numerous lakes and ponds that provide water clarity that results in surfaces which mirror the peaks and wandering clouds. Running waters momentarily rest in pools between series of cascades caused by truck-sized boulders or vertical drops of the waterfalls.

B. Classification Suitability

If Congress includes the river in the system, the agency that is to manage it must prepare a management plan that assigns it one of the three classifications available under the law. Of the three classifications available for an eligible river, the Los Pinos clearly fits the level of "wild". Wild river areas are described as, "those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America".

The river corridor does not contain any impoundments and is free flowing. Access into and along the river corridor is only by trail with the closest trailhead at the end of a road being located several miles outside the corridor. Its shorelines and immediate environment are not modified by man's developmental activities. The Lake Creek bridge and the Granite Peak Guard Station are found in the river corridor; however, they do not significantly impede the river's flow or alter the appearance of the river bank.

TABLE V
CAPSULE SUMMARY OF CLASSIFICATION SUITABILITY

Characteristics	Los Pinos	Lake Creek	Flint Creek	Rincon La Osa	Rincon La Vaca	Snow Slide	Sierra Vandera
Free flowing as affected by:							
Impoundments	None	None	None	None	None	None	None
Diversions	None	None	None	None	1	None	None
Trail Bridges	None	1	None	None	None	None	None
Improvements affecting the natural scenery:							
Buildings	1	None	None	None	None	None	None
Fences	1	None	None	None	None	None	None
Developed							
Recreation Sites	None	None	None	None	None	None	None
Mines	None	None	None	None	None	None	None
Roads	None	None	None	None	None	None	None
Trail Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Classification Suitability	Wild	Wild	Wild	Wild	Wild	Wild	Wild

C. Alternative Formulation

Including a river in the National Wild and Scenic Rivers System precludes water developments and constrains certain types of other land and resource uses, so the Water Resource Council procedures (Principles and Standards for Planning Water and Related Land Resources; Federal Register 38:174:III, September 10, 1973) is followed in formulating and evaluating alternative effects.

Briefly described, this procedure establishes alternative plans that serve to enhance National Economic Development (NED) and Environmental Quality (EQ) which are two co-equal national objectives. In the procedure, correlative alternative plans may be established to seek out the best possible resolution of the issues. Once established, the plans are then analyzed and their effects are displayed in a system of accounts. Once displayed, the decision makers can evaluate the alternatives and select the preferred course of action.

Principal issues identified by the public, relevant to the river study, are protection of the environment and enhancement of economic development. Alternatives oriented to these primary concerns were considered along with a no action alternative that provides a base line for comparison of the effects of the alternatives. No action does not mean the absence of planned management; it is the deliberate continuation of current management and plans into the future.

Two conditions underlie the formulation of a NED alternative plan. First, there must be a need for the goods and services of a resource (component need) and second, actions under the plan must be able to satisfy the component need. Chapter II established that the Los Pinos area has an economy based on natural resources. The objective of economic development can be served only by increasing the amount or improve production efficiency of these resources. To qualify the component needs related to economic development, a supply-demand analysis was made of dispersed and developed recreation, timber, livestock grazing, minerals, and water uses.

The analysis of the resources related to economic development showed:

Dispersed Recreation use in 1977 was 28,900 visitor days. This compares to 14,000 visitor days in 1970. There has been an annual increase of about 14 percent, although some wide fluctuations in individual years were noted. The Southern Rocky Mountain Area Guides indicate that an average annual increase of 5 percent may be expected in the area that encompasses the Los Pinos River. Using this assumption, the use in 1985 could swell to 42,700 visitor days.

IV

The recreation carrying capacity of the Los Pinos River valley, as given in proposed interim direction for the Weminuche Wilderness, is 42,700 visitor days. Thus it can be seen that currently the supply exceeds demand and that in 1985 the demand is expected to equal or exceed supply. Since the supply is limited by the carrying capacity of the wilderness, there is no additional opportunity to contribute to economic development through the dispersed recreation component.

Developed recreation and timber components were briefly considered. Because the entire study corridor is within the Weminuche Wilderness, there is not now, nor will there be, an opportunity for developed recreation or timber production to contribute to the NED objective.

Livestock grazing in 1978 was 2,125 sheep months. The supply, which is based upon range capability is 11,270 sheep months. Because the supply is fixed by range capability which has no opportunity for range improvement because of wilderness regulations and since actual use is far lower, no formal demand-supply analysis was made. There is no component need for increasing livestock grazing; therefore, no economic development enhancement can occur.

Mineral resources of the Los Pinos river basin were inventoried and described in Chapter II of this report. There is no record of production of minerals in the area. Potential for mineral development exists in nearby Cave Creek basin, but outside the river corridor. Since there are no known or proven deposits or known potentials in the river corridor, economic development cannot be served through the mineral resource component.

Water resource development was considered because of local concerns about future water supplies. There is a need to improve efficiency of water use and development, and several potential projects exist. A potential to develop storage capacity at Emerald Lake on Lake Creek has been identified, however, no substantive proposal for a project has been made. It is beyond the scope or responsibility of this study to formulate a detailed project proposal for water storage or improving efficiency of its use. For this reason no economic development enhancement by the water resource component can be identified except as an opportunity. Alternatives which foreclose the option to develop water resources will include the potential loss as an opportunity cost or benefit foregone.

The foregoing analysis of the economic developments demonstrates that no National Economic Development Alternative Plan exists. The No Action Alternative can serve NED by at least maintaining current situations and potentials.

Similarly there must be a need for those components which serve Environmental Quality and a means to satisfy these needs. Protection of the wild river character and free flowing nature of the Los Pinos River were identified as components contributing to the enhancement of environmental quality. To satisfy this need, an alternative plan was developed proposing the Los Pinos River and eligible tributaries be added to the National Wild and Scenic Rivers System.

A third alternative was considered because of expressed public concern. This alternative is based on the local public's recognition of the importance of water use in the region coupled with their concerns for maintaining the Los Pinos in a wilderness setting. This alternative would exclude Lake Creek from the other tributaries in the recommendation to designate the Los Pinos River.

The alternatives are:

Alternative Plan A - The Los Pinos and its tributaries would not be added to the National Wild and Scenic Rivers System. Future management of the river would be guided by the interim management direction for the Weminuche Wilderness.

Alternative Plan B - Include the Los Pinos River and its eligible tributaries in the National Wild and Scenic Rivers System as a wild river component. Future management would be guided by the interim management direction for the Weminuche Wilderness since these wilderness management objectives and directions are more restrictive than those for wild rivers stated in the Federal Guidelines.

Alternative Plan C - Include the Los Pinos River and its eligible tributaries except Lake Creek in the National Wild and Scenic Rivers System as a wild river component. Future management would be guided by the interim management direction for the Weminuche Wilderness since wilderness management objectives and direction are more restrictive than those for wild rivers.



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1. Trail bridge over Lake Creek.
3. Early cabin used by crews working on the water ditches near the Continental Divide.

2. Water fall on Pine River near snowslide.
4. A flat section of the Los Pinos River near the Granite Peaks Guard Station. Even during the fall period there is a substantial volume of water.

V. EFFECTS OF IMPLEMENTATION

Through the Principles and Standards process, the effects of each alternative plan are identified for four different accounts. They are national economic development and environmental quality (not to be confused with the NED and EQ national objectives), regional development, and social well being. Each of these accounts are made up of components that can be affected by actions under each alternative plan.

The effects of each alternative of the components of the four accounts follow:

A - Components Of National Economic Development

In the preceding chapter it was determined that such resource uses that normally would contribute to economic development, like timber harvest, grazing livestock, dispersed recreation, and developed site recreation, would not be affected by wild and scenic river designation actions. Use of these resources are either prohibited by wilderness law or constrained and limited by interim management direction for the Weminuche Wilderness.

Opportunity for water use development still exists, albeit no specific project plans are developed at this time. Alternative A and C maintain this opportunity as it exists under the constraints of Section 4(d)(4) of the Wilderness Act of 1964 which requires Presidential authority for establishment and maintenance of new water resource improvements. Alternative B, upon implementation, would prohibit water developments in the river corridor and result in an opportunity cost to the Pine River Irrigation District of not being able to develop storage under State law, for 7,077 acre feet at Emerald Lake.

The effect of maintaining the water storage opportunity under Alternatives A and C is based on the assumption that the President would act favorably on a request to grant approval for developing the storage rights.

Although there are no known economic concentrations of minerals in the river corridor at present, there is a slight interest in exploration for nuclear minerals and other fuel minerals. It is assumed that the demand for exploration opportunity will exist until the wilderness lands are withdrawn from all forms of entry subject to existing valid rights, and dispositions for leasing on January 1, 1984 (Section 4(d)(3) of the Wilderness Act).

Alternative A would not shorten the period of time for mineral exploration in the river corridor. Alternative B could result in 17,300 acres of river corridor being permanently withdrawn from mineral entry and leasing prior to 1/1/84. Alternative C could result in 14,700 acres of river corridor being permanently withdrawn from mineral entry and leasing prior to 1/1/84.

B - Components Of Environmental Quality

Protecting and maintaining the free flowing character of the river and its tributaries is the primary intent of the wild and scenic rivers legislation. Alternative A does not meet this intent. Alternative B protects all 54 miles of stream that meets wild and scenic river eligibility criteria. Alternative C affords this protection to 46 miles of stream.

"Outstandingly Remarkable" scenic values are generally protected by wilderness management, as the Forest Service visual management policies and objectives for the wilderness scenic resource are to preserve or protect the natural scenery from impacts other than those of natural physical or biological causes. Alternative A does not completely assure that the visual management objectives for the 17,300 acre river corridor will be met because of potential impacts to the scenic environment from water and mineral development activities which can occur in wilderness. Alternative B assures that the 17,300 acres of outstandingly remarkable river corridor scenery will be preserved and protected to meet the visual management objectives. Alternative C assures that 14,700 acres of river corridor will be completely protected.

Wilderness values of solitude would be maintained through the interim management direction for the wilderness. Theoretically, Alternatives B and C could attract additional users to the Los Pinos and result in a decline of the solitude value. However, this potential effect will be eliminated through distribution of users under proposed wilderness management.

Existing wilderness character of the river corridor can be changed through the opportunity for water and minerals development afforded by Alternative A and in part by Alternative C (in the Emerald Lake area). Alternative B eliminates the potential for change. This effect is based on the assumption that potential mineral and water development activities could occur under Section 4 of the Wilderness Act.

Endangered or threatened species programs are not affected by the alternative plans. Authority for identification and protection of species or management of their habitats is given by the Endangered Species Act of 1973.

Other fish and wildlife values, under the three alternatives, would be protected and managed through existing Federal and State regulations. Actions to provide additional protection to fishery values through restrictive bait regulations and/or creel limits have been recommended. None of the three river alternatives would affect these potential actions as these regulations could be established under State law without regard to the Wild and Scenic Rivers legislation.

Cultural and historic values are protected and managed under authorities provided by the Antiquity Act of 1906, P.L. 59-209, The Reservoir Salvage Act of 1960, P.L. 86-523, and the Historic Preservation Act of 1966, P.L. 89-665. The three alternative plans do not cause any positive or negative effects on these values.

The three alternatives do not cause any irreversible commitments of resources because classified wilderness status generally maintains the status quo as does wild and scenic river designation. Alternative B has an irretrievable loss of potential water storage until the use for wild and scenic rivers changes.

C - Components Of Regional Development

Regional development is an account which is concerned with the economic effects of a proposed action on the immediate region of the study. It covers such things as gross Regional product generated, Regional income generated, and Regional employment. As with National economic development, there appears to be no effect caused by the river designation. In the wilderness setting, the only values foregone are opportunity costs for water development and mineral discovery potential.

Interim management direction for the Weminuche Wilderness controls and, in some cases, limits the use of other resources that contribute to Regional Development without regard to alternative plans for this study.

D - Components Of Social Well Being

Social well being is defined as the number of choices people can make. When choice is broadened, social well being is enhanced or improved. The only component (or choice) in this study that was developed from public concern is the choice for water use development. Other general components suggested (or required) by the Water Resources Council are negated by the river's wilderness status. The components are:

1. Education Opportunity

The three alternative plans will have little effect on this component. Alternative B will provide the opportunity for long term environmental study of a free flowing stream system. Alternatives A and C allow for the same opportunity in short term but do not assure that it will exist over the long run.

2. Recreation Experience

Wilderness status establishes the level of recreational experiences that can be provided without regard to river designation status.

3. Emergency Preparedness

In the wilderness setting, the river alternatives will not affect the reserve capacities and flexibility of utilizing the various resources in time of national disaster or critical need. Any resource actions needed in time of national stress would first have to resolve the need to modify or amend the National Wilderness Preservation System.

4. Freedom of Travel

Within the river corridor, proposed wilderness management is more restrictive on location of trails and user distribution than management objectives for a wild river. River travel (white water boating) is restricted to those types of water craft which can be carried in on the trails by primitive means. However, these constraints are limitations of wilderness management rather than wild and scenic rivers objectives.

5. Real Income Distribution

An in-depth economic study of wilderness effects would have to be made to determine if the river alternatives would have any effect on real income distribution. The choice for additional water storage at Emerald Lake would affect the landowners in the agriculture sector. Other than the opportunity for choosing if a potential should be implemented, there does not appear to be any effect resulting from the river alternatives.

TABLE VI

SUMMARY AND COMPARISONS OF EFFECTS OF ALTERNATIVE PLANS

ACCOUNT	COMPONENT	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
NATIONAL ECONOMIC DEVELOPMENT	Future water storage development (opportunity cost)	Development under State decree at Emerald Lake possible with the President's approval.	Development under State decree at Emerald Lake prohibited.	Development under State decree at Emerald Lake possible with the President's approval.
	Mineral Exploration (Opportunity Cost)	17,300 acres* of river corridor open for exploration and entry until 12/31/83.	17,300 acres* of river corridor withdrawn from exploration and entry prior to 1/1/84.	14,700 acres* of river corridor withdrawn from exploration and entry prior to 1/1/84.
*These acres are temporarily withdrawn during the period of study.				
ENVIRONMENTAL QUALITY	Protect and maintain river's free flowing character (miles of stream).	Protection of 54 miles not assured.	Protection assured for 54 miles.	Protection assured for 45 miles.
	Protect and maintain "Outstandingly Remarkable" scenery (acres of river corridor).	Impacts could occur on 17,300 acres because of future water or minerals development.	17,300 acres protected.	14,700 acres protected.
	Protect existing wilderness character (acres of river corridor).	Wilderness character could be modified on 17,300 acres because of future water or minerals development.	17,300 acres protected.	14,700 acres protected.
	Irreversible commitment or resources.	None	None	None
	Irretrievable losses.	None	Benefits from future development of decreed water rights at Emerald Lake.	None

TABLE VI (continued)

ACCOUNT	COMPONENT	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
REGIONAL DEVELOPMENT	Opportunity for-- Gross Regional Product Gross Regional Income Regional Employment Water Development	Opportunity unquantified but exists through water and mineral development opportunity.	Opportunity lost.	Opportunity unquantified but exists for water and some mineral development.
	Minerals exploration and development.	Opportunity unquantified but exists for several year period if temporary withdrawal is lifted.	Opportunity lost.	Opportunity unquantified but exists in areas of historic mineral interest*.
*The area in Lake Creek could have the temporary withdrawal lifted to the general withdrawal under authority of the Wilderness Act.				
SOCIAL WELL BEING	Education Opportunity	Does not assure long range opportunity for environmental education and research concerning free flowing stream systems.	Assures this opportunity.	Does not assure this opportunity.
	Recreation Opportunity	Plan is neutral as it does not change the wilderness constraints.	Plan is neutral as it does not change the wilderness constraints.	Plan is neutral as it does not change the wilderness constraints.
	Emergency Preparedness	Neutral for this component.	Neutral for this component.	Neutral for this component.
	Freedom of Travel	Travel in river corridor restricted to locations and methods established through wilderness management.	Travel in river corridor restricted to locations and methods established through wilderness management.	Travel in river corridor restricted to locations and methods established through wilderness management.
		Plan is neutral outside river corridor.	Plan is neutral outside river corridor.	Plan is neutral outside river corridor.
	Real Income Distribution	Unquantified.	Unquantified.	Unquantified.

VI. EVALUATION OF ALTERNATIVES

The actions and effects of each alternative were evaluated according to the six evaluation criteria that were developed at the beginning of the study.

Criterion 1 (Spirit and intent of the Wild and Scenic Rivers Act):

Alternative A does not fully meet the intent of the law because it relies on wilderness legislation to protect the river. The free flowing character of Lake Creek could be altered if the level of Emerald Lake is raised. In the balance of the river corridor, the intent of the Wild and Scenic Rivers Act would be met.

Alternative B fully meets the intent of the Act.

Alternative C meets the intent of the Act by protecting the major portion of the Los Pinos and its tributaries. The free flowing character of Lake Creek could be altered as in Alternative A.

Criterion 2 (Classification level that limits use to maintain wilderness character):

All three alternatives fully meet this criterion because distribution of recreationists is established by the Interim Plan for Managing the Weminuche Wilderness.

Criterion 3 (Contributions to the co-equal national objectives of National Economic Development and Environmental Quality):

Although Alternative A does not enhance the NED objective it does not foreclose future opportunities for water development and minerals exploration. It does not completely assure that the environmental quality of the river be maintained.

Alternative B contributes to the EQ objective by assuring, through Congressional action, that the environment would not be impacted through future water and mineral development on designated segments of the river.

Alternative C, like A, does not completely preclude options for future water development on Lake Creek. It has the same effect as Alternative B on the other eligible tributaries and the main stem.

Criterion 4 (Agency application capability):

All three alternatives fully meet this criterion because the action would be implemented by the Forest Service under existing authorities.

Criterion 5 (Long range goals of the State of Colorado):

Alternative A slightly contributes to the goal in that the agriculture component of the region is enhanced by maintaining future opportunities for water development which could aid in slowing the trend of converting agricultural land and water to other non-renewable uses. The concern for the State beauty, wildlife, and wilderness, if impacted by future opportunities under Alternative A at this time, is unquantifiable and a matter of questionable significance in view of the small land area concerned.

Alternative B partially meets the criterion. The goals for beauty, wildlife and wilderness would be met for a small area, recognizing there is a potential trade off of adversely affecting agricultural land and water use for a correspondingly small region.

Alternative C meets the State objectives by enhancing both long range goals of the State by assigning their importance to specific portions of the river corridor. Decreasing the trend of agriculture land and water conversion potentially could be achieved by maintaining the opportunity for water development on Lake Creek. On the balance of the river corridor, the goals of beauty, wildlife, and wilderness would be enhanced.

It is especially important to note carefully that this criterion and others view the potential for water development as an opportunity which would still have to be approved by the President.

Criterion 6 (Citizen opinion):

Each alternative reflects the various public opinions that were used to identify the issues of the study. Alternative A reflects the opinions of that segment of the public who expressed their belief that the river was adequately protected under wilderness law. Alternative B addresses the various opinions that the river should be designated to insure protection of the river's free flowing character and outstanding environment of the river corridor. Alternative C addresses the local opinion that recognizes the value of protecting a major portion of the study river while still allowing for development of water rights under State law.

TABLE VII

EVALUATION SUMMARY AND RANKING OF ALTERNATIVE JUDGEMENTS

<u>Criterion</u>	<u>Alt. A</u>	<u>Alt. B</u>	<u>Alt. C</u>
1. Spirit and intent of the law	1	3	2
2. Use balanced with wilderness carrying capacity	3	3	3
3. Contributions to both NED and EQ	1	2	3
4. Agency capability	3	3	3
5. Colorado long range goals	1	3	3
6. Citizen opinion	3	3	3

3 - The best alternative; or ranking when alternative is judged to fully meet criterion.

2 - Better than at least one other alternative.

1 - Meets evaluation criteria to least degree.



1



2



3

- 1 One of the many alpine lakes that feed the Los Pinos River.
- 2 Rock monument near Cave Creek. Shepherders in the early part of the century constructed many of these to pass away the lonely hours.
- 3 One of numerous water falls found on the Los Pinos and its tributaries.

VII. THE RECOMMENDED ALTERNATIVE

A. Conclusion

The U.S. Forest Service and the Colorado Department of Natural Resources jointly conclude that the Los Pinos River above the Granite Peak Ranch and its tributaries of Lake Creek, Flint Creek, Rincon La Osa, Rincon La Vaca, Snowslide Canyon, and Sierra Vandera are eligible as worthy additions to the National Wild and Scenic Rivers System. Lacking significant development, the river and its tributaries meet the classification criteria for wild river areas.

Alternative Plan B is the selected recommendation because it best meets criteria of the spirit and intent of the Wild and Scenic Rivers Act, and the State's long range goals enunciated by the Governor of Colorado. Alternative B will further aid in maintaining wilderness values by providing legislative protection for the river's free flowing character and outstandingly remarkable scenery. Designation of the river complements the purpose for establishing the Weminuche Wilderness and does not conflict with proposed management to maintain or enhance wilderness values.

Alternatives A and C were not selected because they met evaluation criteria to a lesser degree. There are no overwhelmingly important national values or uses that will be foregone or curtailed by designation of the eligible segments.

B. Recommendation

In accordance with Public Law 93-621, 90-542 as amended, and the Guidelines issued by the Secretaries of Agriculture and Interior, the U.S. Forest Service and the Colorado Department of Natural Resources jointly recommend that the Los Pinos River and its tributaries be classified Wild River Areas and administered by the Forest Service as follows:

- The Los Pinos River, from its junction with the northern line of the Granite Peak Ranch upstream to its confluence with Rincon La Vaca and North Fork (about 20 miles)
- Lake Creek, from its confluence with the Los Pinos River upstream to its headwaters at Moon Lake (about 8 miles)
- Flint Creek from its confluence with the Los Pinos River upstream to its headwaters at Flint Lakes (about 8 miles)
- Rincon La Osa, from its confluence with the Los Pinos River upstream to its headwaters near Ute Peak (about 6 miles)
- Rincon La Vaca, from its confluence with the Los Pinos River upstream to its headwaters near the Rio Grande Pyramid. (about 5 miles)
- Snowslide Canyon Creek, from its confluence with the Los Pinos River upstream to its headwaters on the Continental Divide. (about 3 miles)
- Sierra Vandera, from its confluence with the Los Pinos River upstream to its headwaters near Flag Mountain (about 4 miles)

It is further recommended that the detailed boundaries of the river be established as about one-quarter mile from the river's edge in accordance with the limits prescribed by Section 3(b) of the Act.

C. Management Plan

The Wild and Scenic Rivers Act allows a period of about one year after wild and scenic rivers designation for the administrative agency to prepare a management plan, including detailed boundaries (governed by provisions of the Act), classifications and plans for necessary administration, development, and management in accordance with its classifications.

Wild river classification complements the interim management objectives for the Weminuche Wilderness. Since the management requirements of the interim guidance for the Weminuche Wilderness are far more restrictive than those for wild river areas, it appears provisions for management under the Wilderness Act will generally apply and guide further planning.

The following existing management and river corridor situations decrease the need for further specific river planning. It appears that the Congress could, upon classification, waive the planning requirements of Section 3(b) of the Act except for the establishment of detailed boundaries.

1. Forest planning under the authority of the National Forest Management Act of 1976 will include management requirements for wilderness and other special designated areas.
2. There are no private lands that would require easements or purchase.
3. Designation of the river will not result in any user developments because of wilderness restrictions.
4. The river is generally not a boatable river and does not require any special or additional white-water boater controls.
5. Existing and future wilderness constraints negate the opportunity for signing, river visitor information programs, and other user developments.
6. The State of Colorado will not share in the cost of administering the river.

The total estimated cost of the proposed designation is \$7,000 annually for operation, maintenance, and administration. In accordance with wilderness management there will be no construction and development costs.

VIII. CONSULTATION WITH OTHERS

Prior to conducting the field studies, announcements of the study were given wide coverage through the news media and mailings to about 200 individuals and organizations (both local and statewide). The announcement encouraged the public to contribute information, concerns, and ideas.

During the course of the study, telephone interviews and meetings were held with various interested organizations and individuals.

Public Response follows:

Pine River Irrigation District - Three substantive inputs were made by the Irrigation District. They are summarized:

1. There is a greatly accelerated demand for additional water within the boundaries of the Irrigation District because of the rate of persons settling in the District. The District has already been forced to limit the amount supplied to any single individual. In the very near future this additional water need can only come from their storage rights at Emerald Lake.
2. The Board is concerned that if the Federal Government wins the reserved water rights suit they would have to take immediate steps to implement storage at Emerald Lake.
3. The Board offered three alternative proposals. They are quoted:
 - a. "Move boundary east of Lake Creek and the Emerald Lake."
 - b. "Designate the Lake Creek and Emerald Lake as a recreational river area which would permit the District to impound its storage at the lakes."
 - c. "Designate as scenic river area, with stipulation the District can impound and release its decreed water from the Emerald Lake site after construction of the necessary dam."

Input from the Pine River Irrigation Board was directly used to develop Alternative Plan C and to establish assumptions for the submission of a project plan at some future date, for an impoundment at Emerald Lake.

Vallecito Chamber of Commerce - The Vallecito Chamber of Commerce acknowledged the importance of the Weminuche Wilderness in providing a balanced approach in providing opportunity for various recreation experiences within their recreation based economy.

They expressed concern that the major attraction to the area (economic related) is Vallecito Reservoir. The Chamber recognizes the importance of the Pine River Irrigation District's ability to develop their storage decree at Emerald Lake to provide supplemental water for the years Vallecito Reservoir does not fill. They believed designation of the river would have a positive impact by attracting more visitors to the local area.

Wilderness Workshop of the Colorado Open Space Council - Members of the workshop related that although the Los Pinos River may not carry the priority, because of wilderness status, as did other Colorado rivers, designation is important to provide insurance against potential impacts to the wilderness environment that could occur as the result of mineral and water development allowed under the Wilderness Act. They did not believe that river designation would attract a significant increase in use as the surge of users occurred when the area was classified as wilderness.

Colorado Mining Association as Represented by Mr. Charles Butler, Southwest Colorado Representative - Speaking unofficially, Mr. Butler said he believed that to undertake the high costs of exploration in the wilderness, a prudent mining company would have to have a very favorable showing from geological and mineral examination reports. Since the large companies have not actively pursued exploration in the specific river corridor, the showing for the Pine River is minimal. Discussion with Mr. Butler helped to develop assumptions for evaluating the mineral activity. An official position was not presented by the Colorado Mining Association.

Mr. Terry Stewart, President, Colorado Open Space Council - Had reviewed the public information sent out by the San Juan National Forest for the interim management guidelines for the Weminuche Wilderness and believes this approach to wilderness management would initiate necessary controls to protect the wilderness values of the river corridor. However, river designation is desirable to assure maintaining wilderness values that could be disrupted by mineral or water development projects.

Comments from all other sectors of the public were of a general nature and reflected a lack of specific controversy because of the river's present wilderness status, no private lands involved, and the river not having the character for white-water boating. However, most of the comments fell into one or more of the broad categories listed below:

- concern whether there is a need for double classification since the river is already in wilderness.
- concern that the fishing could be improved if the river were classified.
- concern that any action that will preserve the river and its environment is needed.
- concern that additional advertising the river will attract overuse and degrade the existing fishing quality.
- concern that river designation will lead to strict controls on users through a permit system.
- concern that river designation will prohibit gold panning or prospecting as a recreation activity.

Individual contributions were received from:

Mrs. Alta Beuton Bayfield, Colorado	Mrs. Gwenivere Mars Vallecito, Colorado
Mr. Robert Binks Vallecito, Colorado	Ms. Meg Nagal Denver, Colorado
Mr. Clarence Black Vallecito, Colorado	Mr. Steve Newman Vallecito, Colorado
Mr. Robert Burch Vallecito, Colorado	Mr. Tom Taylor Bayfield, Colorado
Mr. Earl Haber Durango, Colorado	Mr. Frank Wommer Bayfield, Colorado

Technical contributions from Government agencies include:

USDI - Bureau of Reclamation, Upper Colorado Regional Office - The Bureau presently does not have any studies planned in the Los Pinos drainage above Vallecito Reservoir. A potential hydropower plant was investigated using Emerald Lake and reported on in 1946 (The Colorado River) and 1970 (Upper Colorado River - Comprehensive Framework Study Appendix XIV). Appraised estimates made in 1971 and 1972 showed the site to be infeasible.

USDA - Soil Conservation Service, Durango, Colorado - The local District provided data on water use requirements for local crops, crop values, and underscored the potential for more efficient application of irrigation waters that could offset the growing demand for water.

Colorado State Historical Society - Provided a limited on-the-ground archaeological survey along the river corridor and other pertinent historic data.

Colorado Division of Wildlife - Provided all wildlife and fisheries data.

Colorado Water Conservation Board - Was jointly involved in the study team; provided all water records and water use data and coordinated the concerns and contributions of the State agencies.

APPENDIX A

COMMON VEGETATION/WILDLIFE ASSOCIATIONS IN THE LOS PINOS

Spruce Type:

Elk, mule deer, and black bear are the major mammals that inhabit this type. It provides escape, resting cover and some food production areas for the bears. Deer and elk find habitat for bearing and rearing their young in this type. Common birds found in the type include: mountain chickadee, pine siskin, ruby-crowned kinglet, western flycatcher, hairy woodpecker, and sharp-shinned hawk.

Douglas-fir Type:

This vegetative type is inhabited by a large variety of wildlife species because of a greater variety of vegetation than found in the spruce type. Major species present include elk, mule deer, black bear, coyote, and red squirrel. Common birds in this type include: blue grouse, Steller's jay, Williamson's sapsucker, hermit thrush, warbling vireo, and violet-green swallow.

Aspen Type:

The variety of vegetation provides excellent summer habitat for all animal species found in the area. Where adequate water is present, this type provides excellent habitat for water dependent species such as beaver and muskrat. Elk and mule deer find the vegetation ideal habitat when situated near the conifer stands which provide cover. Since most of the aspen type is interspersed with the conifer types, the wildlife species and birds are also common to the other types.

Willow and Wet Grasses:

This vegetative type is used by many species during the summer months. Many species are dependent on this type because of their dependence upon aquatic vegetation. Waterfowl, beaver, muskrat, and small mammals such as shrews and moles are residents of this type. Water ouzel, red wing blackbirds, and cliff swallow are common birds in this type. Another primary value of the type is for forage and cover for wildlife as they come for water.

Rock and Dry Grasses:

The species utilizing this habitat are generally the same as for other types. In the alpine areas, the most notable species utilizing the rocks for cover and grass for food habitat are the pika and ptarmigan. At lower elevations this type is inhabited by mice, ground squirrels, badger, and skunk.

APPENDIX B

WATER RESOURCES OF THE LOS PINOS

Figure B-1 is the hydrograph for the Los Pinos River above Vallecito Reservoir. Data was protracted from the Vallecito Creek recording gauge #09352900, and then subtracted from the Bureau of Reclamation inflow records for Vallecito Reservoir. Data Source: Water Resource Data for Colorado, Part 1, Surface Water Records, United States Department of Interior, Geological Survey and Bureau of Reclamation.

During 1976, a baseline water quality survey was made on the Los Pinos River above the Weminuche Wilderness boundary. Tables B-1 through B-4 display the results of the survey. The report is on file at the Supervisor's Office, San Juan National Forest, in Durango, Colorado. Following are the conclusions of the baseline study:

The physical, chemical, and biological data collected in the Los Pinos River study area indicates excellent water quality (see Table IV).

- A. Temperatures of these waters averaged 52.4°F, did not exceed 60°F, and fluctuate normally with the seasons.
- B. Nutrient levels are naturally low, possible to the extent of being limiting to aquatic plants.
- C. The Los Pinos waters can be classified as soft; such hardness as exists is due to the presence of calcium and magnesium rather than non-carbonates.
- D. The pH is reflected by the equilibrium state of carbonic acid versus the hydrogen ion concentration and the bicarbonate ion. Values of pH fluctuate between 7.0 and 8.5 which lie well within the range necessary for fresh water organisms.
- E. Alkalinity is attributed to the bicarbonates in the Los Pinos. The carbonate system is not highly buffered, in that measured alkalinities ranged from only 9 mg/l as CaCO_3 to 46. The average of these values is 20.1. Considering the FWPCA criteria which states that the carbonate system is endangered at values below 20, we can state that the Los Pinos would be intolerant to additions of acid and could easily become polluted.
- F. The amounts of dissolved solids existing in the Los Pinos headwaters are extremely low.
- G. Turbidity levels are very low based upon past data and current observation. They are definitely not limiting to aquatic flora and fauna.
- H. We do not have conclusive data with regard to dissolved oxygen. The only measured value we have, obtained in 1969, indicates that dissolved oxygen was 9 mg/l; the oxygen saturation level was 92 percent. Regarding the nature of the area, with cold temperatures, low atmospheric pressures, and high channel gradients, we infer that the oxygen content will be close to saturation, generally. The lowest 100 percent saturation value on the Los Pinos itself is calculated to be 7.05 mg/l which is well above the minimum required by fish.
- I. A survey of benthic organisms revealed a lack of species variety and insect numbers. It did show the presence of pollution intolerant species such as mayflies, caddisflies, and stoneflies.

Consideration of the outstanding quality of the Los Pinos waters should be made. It should also be recognized that the river is not highly productive, and is very susceptible to chemical pollution with any addition of acid substances.

TABLE B-1

1976 Los Pinos Water Quality Summary

<u>Parameter</u>	<u>Colorado Class B₁ Standard</u>	Los Pinos	
		<u>Range</u>	<u>Mean</u>
Temperature °F	Maximum 68°F, Maximum change 2°F	46-60	52.4
pH	6.0 - 9.0	7.4-7.8	7.65
Turbidity	No increase of more than 10 JTU's	N.D.	
Dissolved O ₂	Minimum 6 mg/l	N.D.	
Fecal Coliform	Geometric mean of 1000/100 ml from 5 samples in 30 day period	0-5	1.33
Total coliform	Federal standard 100/100 ml	N.D.	
Recommended Federal Water Quality Criteria For Freshwater Organisms			
Phosphorus	Maximum .1mg/l in flowing streams	N.D.	
Nitrogen	Naturally occurring ratio with P (10:1)	N.D.	
Hardness	None	6-32	13.5
Alkalinity	Minimum 20 mg/l	9-46	20.1
Specific Conductance	None	25-60	30.0
Percent O ₂ Saturation	At or near saturation	N.D.	

TABLE B-2

METHODS OF DETERMINING LOS PINOS
RIVER WATER QUALITY

<u>Parameter</u>	<u>Method of Analysis</u>
Flow	Visual Estimation
Nitrate	Hach Cadmium Reduction (Nitraver IV)
Nitrite	Hach Diazotization - Low Range
Orthophosphate	Hach Ascorbic Acid Method
Hardness	Hach Hexaver (Univer II) Titration
Phenolphthalein Alkalinity	Sulfuric Acid Titration (Phenolphthalein)
Total Alkalinity	Sulfuric Acid Titration (Methyl purple)
Specific Conductance	Bechman Conductivity Meter
pH	Hach Colorimetric
Dissolved Oxygen	Modification of Winkler Method (PAO)
Insects	Visual Observation
Fecal Coliforms	Millipore - Membrane Filter

TABLE B-3

DATA: LOS PINOS RIVER WATER QUALITY STUDY

Parameter	1	2	3	4	5	Station		8	9	10
						6	7			
Temperature F	54	52	49	58	53	46	53	60	49	50
pH	7.4	7.7	7.7	7.4	7.8	7.8	7.6	7.8	7.6	7.7
Turbidity	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	-	-	-	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	0	0	2	0	1	5
Total Coliform	-	-	-	-	-	-	-	-	-	-
Phosphorus										
Nitrogen										
Hardness	8	8	10	10	6	13	12	12	32	24
Alkalinity	18	14	11	20	9	18	12	18	35	46
Phenolphthalein Alkalinity	0	0	0	0	0	2	0	3	0	0
Specific Conductance	25	25	25	25	25	25	25	25	60	60
Percent O ₂ Saturation	-	-	-	-	-	-	-	-	-	-
Approximate Flow cfs	5	3	1.5	30	2	2	8	50	28	85

TABLE B-4

DATA: LOS PINOS RIVER WATER QUALITY STUDY
NUTRIENTS AND METALS

Parameter	1	2	3	4	5	Station		8	9	10
						6	7			
Nitrates	0	0	0	0	0	0	+	0	0	0
Nitrites	0	0	0	0	0	0	+	0	0	0
Orthophosphate	+	+	+	0	0	0	0	0	0	0
Iron	0	0	0	0	0	0	0	0	0	0
Copper	0	0	0	0	0	0	0	0	0	0
Silica	++	+	+	+	+	+	++	++	++	++

Key:

0 - Not present in sufficient quantity to be measured by Hach water analysis procedures

+ - Present in measurable quantities

++ - Apparent high concentrations

APPENDIX C

EXCERPTS FROM GEOLOGICAL SURVEY BULLETIN 1261-f CONCERNING MINERAL POTENTIAL OF THE LOS PINOS RIVER CORRIDOR

Pages F1 and F2

SUMMARY

A mineral survey was made by the U.S. Geological Survey and the U.S. Bureau of Mines of the adjoining San Juan and Upper Rio Grande Primitive Areas, southwestern Colorado, and of adjacent areas proposed for inclusion in the National Wilderness Preservation System. The combined area covers about 500 square miles of rugged terrain in the San Juan Mountains and is described in this report as the San Juan Primitive Area. Investigations of the primitive area were made by the U.S. Geological Survey during 1965-68, and those by the U.S. Bureau of Mines were made during 1967-68. Although little mineral production has been recorded from the primitive area, the area borders several highly productive mining districts, and minable mineral deposits probably exist within parts of the primitive area as well.

One hundred ninety-six patented claims and about 425 located claims are within or adjacent to the San Juan Primitive Area. Most of the patented claims are in the Needle Mountains mining district in the southwestern part of the primitive area, whereas most of the located claims are in a narrow belt peripheral to the primitive area. Gold, silver, copper, lead, zinc, uranium, and sulfur ores valued at about \$257,000 have been mined from within or near the San Juan Primitive Area, and the Beartown (Bear Creek) mining district along the northwest margin of the primitive area is credited with about 78 percent of this total.

Geologically, the San Juan Primitive Area is divisible into two parts that contrast strongly in age, rock types, structures, and conditions of origin. The western part of the area is underlain by Precambrian metamorphic rocks, which are intruded by granitic rocks. Most of the remainder of the area is covered by volcanic rocks of middle Tertiary age. Sedimentary rocks of Paleozoic and Mesozoic ages are exposed along the south margin of the area and extend under the volcanic rocks in the eastern part of the area.

In appraising the mineral-resource potential of the primitive area, special attention was given to all the mining districts and to the geologic environments most likely to have mineral deposits associated with them. All areas of hydrothermally altered rocks in the volcanic field, and in Precambrian rocks near volcanic or intrusive centers, were examined and sampled, as were possible fossil (fuels), gold placers, pyritic black slates, and iron-formation in Precambrian rocks. Sedimentary rocks underlying the volcanic cover in the eastern half of the area contain potential oil and gas-bearing reservoir rocks, and the possibilities of such occurrences were assessed. Foot traverses aggregating more than 1,000 miles in length were made in the area, and samples were taken of all rocks that appeared possibly mineralized and of stream sediments along all streams. These samples were analyzed by spectrographic and chemical methods to determine metal content, and the analytical data are presented in the report. Areas found to be anomalously high in metal content were further investigated.

Within and near the primitive area, evidence of mineral deposits of commercial or near-commercial value was found in four areas.

1. The Needle Mountains mining district, in the southwestern part of the primitive area, contains disseminated molybdenite in a hypabyssal intrusive plug, and the surrounding rock is cut by numerous metalliferous veins, some of which have economic potential.
2. Whitehead Gulch, in the northwestern part of the primitive area, contains many small veins and sporadic deposits, some of which are of commercial grade.
3. The Beartown mining district, along the north margin of the primitive area, contains a number of gold-telluride veins that yielded high-grade ore in the late 1800's. Exploration targets still exist, and, with improved access, the district could again become productive.
4. The Trout Creek-Middle Fork Piedra River area, in and adjacent to the northeastern part of the primitive area, contains deposits of native sulfur in highly altered volcanic rocks.

Of the four areas, only the Needle Mountains mining district contains appreciable acreage within the primitive area. The mineral potential of the four areas could be determined only with extensive exploration, which would be beyond the scope of this investigation.

Elsewhere in and near the primitive area, small bodies of lead-zinc ore occur in Cave Basin near Runlett Park along the south margin of the area, and a small amount of uranium ore has been produced west of the Animas River near the west margin of the primitive area. In the past, a few other localities yielded small quantities of high-grade ore, which was packed out on horses and mules. None of these deposits appears to be large enough to have economic potential.

No indications were seen elsewhere in the primitive area that point toward economic or subeconomic mineral resources in a near-surface environment. The possibility of deep metallic mineralization near some of the volcanic centers cannot be eliminated, however, and oil and gas conceivably could exist in hidden traps in the sedimentary rocks beneath volcanic cover.

Pages F37 and F38

ROCK CREEK, LAKE CREEK, AND FLINT CREEK DRAINAGES

(Table 3-K, L, and M)

Stream sediment samples from these stream systems draining different parts of the Precambrian terrane were all effectively negative insofar as indicating metal concentrations of possible economic interest. Here and there, scattered samples show lead or zinc to be somewhat above background by chemical analysis, but, in general, these apparently higher values were not substantiated by spectrographic analysis nor were they closely enough associated geographically to indicate significant areas of concentration.

The influence of source areas on the abundance of some of the minor elements is well illustrated by the samples from Lake Creek. Above Emerald Lake (samples 1-9), the drainage is confined to the metavolcanic rocks of the Irving Formation, and chromium, nickel, and strontium are relatively abundant. Emerald Lake serves as a barrier to the passage of stream sediments at about the south margin of the outcrop area of the Irving Formation. Below the lake (samples 11-17), the stream traverses Eolus Granite and Vallecito Conglomerate, and sediment samples contain distinctly lower concentrations of these same elements. Apparently, these elements traveled in detrital grains and not in solution.

LOS PINOS RIVER DRAINAGE

(Table 3-N)

Los Pinos River is one of the largest streams draining the San Juan Primitive Area. Although it heads within the volcanic terrane, most of its course in the primitive area is within a large batholith of Eolus Granite or in Vallecito Conglomerate. No evidence for mineral deposits was seen anywhere along Los Pinos River, and the stream-sediment samples confirm this apparent lack. Although sporadic analyses by spectrographic or chemical methods indicate higher than normal values, the alternative method of analysis almost always indicates such a sample to be within background ranges, and no local areas with anomalous metal concentrations were discerned.

A downstream increase in iron and titanium content of the stream sediments is particularly marked along Los Pinos River, and is believed to reflect the concentration of resistant magnetite-ilmenite grains (black sand) by the stream and the selective removal of less resistant mineral grains and rock fragments.

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